

# The Mining Journal

## RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 874—VOL. XXII.]

London, Saturday, May 22, 1852.

[PRICE 6D.

IMPORTANT SALE OF ALL THE VALUABLE TOOLS, MACHINERY, UTENSILS, &c., the property of Mr. Thos. Marsden, machinist, of Cross-street, Bury-street, Salford, Manchester, who is retiring from the business.

MR. W. KIRK most respectfully announces that he is honoured with instructions from Mr. Thomas Marsden, who is declining the business, to arrange, catalogue, and SELL, BY AUCTION, on the premises of his works, Cross-street, Bury street, Salford, on Tuesday and Wednesday, May 25 and 26, 1852, all his valuable

MACHINERY, TOOLS, UTENSILS, PATTERNS, &c.

Including magnificent PLANING MACHINE, by Collier, with 17-feet bed—will plane 7 feet 6 inches wide, and 3 feet 6 inches high, self-acting at all angles—will plane both longitudinally and transversely without being disturbed; it is also self-acting in the horizontal and vertical motions.

Several other PLANING MACHINES, of various dimensions, by Joy and others.

Most powerful and excellent SLOTTING MACHINE, by Collier, to take 5-feet diameter, 8-inch stroke, eccentric wheels for quick return motions, and table, with compound slide, self-acting both ways.

UPRIGHT DRILLING MACHINES, by Collier, Nasmyth, Joy, and others.

SHAPING MACHINE, with 10-inch stroke, in excellent order, by Nasmyth.

First-rate and nearly new NUT-CUTTING MACHINE, by Macies and March, Leeds.

About 30 powerful and first-rate double-geared slides—break, self-acting, and single-speed lathes, of various dimensions, by Joy and others; also the cast and wood lathe beds; about 40 pairs vices, benches, smiths and mechanics' tools, stores, gas fittings, two metres, burners, and piping, and other numerous and valuable effects, &c., &c.

Full particulars are given in catalogues, which are now ready, and may be had on the premises of the works, or on application at the offices of the auctioneer, 24, Princess-street, Manchester, or will be sent by post on receipt of two stamps, where also in the interim any further information may be had.

N.B.—THE PREMISES AND POWER TO LET.

WESTON LEAD MINE SHARES.

MESSRS. J. WHITE AND SON will SELL, BY AUCTION, at the Offices of the Company, 2, Winchester-buildings, Old Broad-street, on Monday, 21st May, 1852, at Twelve o'clock, by order of the Committee of Management,

FIFTY-FOUR (1024*th*s) PARTS OR SHARES

(which have been absolutely forfeited) in the WESTON LEAD MINES, situate in the township of PRIEST WESTON, in the parish of CHIRKBECK, SALOP, and the townships of CHURCHSTOKE and HUNTINGTON, in the parish of CHURCHSTOKE, MONTGOMERYSHIRE. The sum of £2 has been paid upon each share, and they will be sold in lots of five shares.

For particulars apply to Mr. T. A. Readwin, Secretary of the Company; and at the offices of the auctioneers, 1, Union-court, Old Broad-street.

TO GOAL OWNERS, SINKERS, CONTRACTORS, FOUNDERS, AND OTHERS.

MR. GEORGE HARDCastle has the honour of announcing that he has been commissioned, on behalf of the noble proprietors of the SEAHAM AND SEATORNES, near Seaham Harbour, the county of DURHAM, to SELL, BY PUBLIC AND UNRESERVED AUCTION, upon the premises, on Monday, the 7th of June next, a large quantity of the

VALUABLE MATERIALS.

employed in sinking and winning these collieries—consisting of common pumps, from 1*th*s to 31*th*s bore, in convenient lengths; also, working barrels, cleat pieces, bucket door pieces, and windores: Hopper pumps, bucket joints, bottom-rods, ground spear bottom rods, spear plates and bolts, ground sheaves, spear topblocks and sheaves, bucket door cross-bars and bolts, 16-feet gin, two ground crabs, several yokes for beam,

SIXTY TONS OF METAL TUBING,

in segments 1 foot high, for short 14 feet diameter; crab shears and pulleys for flat-rope, two new counter balance rope planes, timber bogie, iron malleable from water tube, lead weezes for pumps, brass bearings, SCRAP IRON and OLD METAL, and

TWELVE TONS OF NEW AND SECOND-HAND ROPE.

The sale to commence at Eleven for Twelve o'clock.—Particulars in catalogues and further advertisements.

PAYMENTS.—Under £30, in cash; between £30 and £50, in approved bills, at three months' date; above £50, in approved bills, at six months, or 5 per cent. per annum discount allowed for cash.

N.B.—The place of sale is in immediate connection with the great inland railway system, and possesses the further advantage of communicating with the coast through the commodious port of Seaham Harbour, which is but a mile distant from the collieries. Sunderland Sale Offices, May 18, 1852.

Sale of Incumbered Estates.

IN THE COURT OF THE COMMISSIONERS FOR THE SALE OF INCUMBERED ESTATES IN IRELAND.

THE AUDLEY ESTATES.—COUNTY OF CORK.

In the Matter of the Estate of the Right Honourable GEORGE EDWARD LORD BARON AUDLEY, Owner.

Ex parte DAVID WILLIAM NELGAN, Petitioner.

VALUABLE FEE SIMPLE ESTATES, which comprise TWENTY-SIX TOWNSLANDS, containing in the whole 5676 statute acres, situate in the Baronies of EAST and WEST COTTERY, in the West Riding of the county of CORK, together with the IMPROPRIATE TITHE RENT-CHARGE of the parishes of AFFADOWN KILCOE and CAPE CLEAR: also of the THREE PARISHES of KILKATRAN, KILLOGANAGH, and KILMANAGH, forming the Union of Bantry, situate in the West Riding of CORK.

The several denominations of land, and the inappropriate tithe rent-charge, the subject of the sale, were demised in the year 1755 by James Earl of Castlehaven and Baron Audley to Mr. William Hull, for the term of 99 years, of which term there is one year and a half to run from November next, and the several lots will be sold, subject to the residue of that term.

The rent reserved by said lease of 1755 being £255 7s. 9d., present currency, has been apportioned amongst the several lots of land, and each purchaser will be entitled to receive such portion thereof during the remnant of said term, as is stated in the particulars of his lot.

The MINES of COPPER and other MINERAL PRODUCTS of the ESTATES, which are deemed very valuable, will be sold separately from the lands. Mr. Henry English, mining engineer, has recently inspected these mines, by order of the Commissioners, and his report will be found attached to the rental.

Dated this 5th day of May, 1852.

HENRY CAREY, Secretary.

For rentals and further particulars apply at the Office of the Commissioners, No. 14 Henrietta-street; or to Sir Matthew Barrington, Bart., and Jefers, solicitors, having carriage of the sale, No. 10, Ely-place; Richard Scott, Esq., solicitor for Lord Audley, 16, Middle Gardiner-street; and Messrs. White and Fry, 18, Lower Mount-street, Dublin; and to Messrs. Young and Jacksons, 12, Essex-street, Strand, London.

SALE OF THE LOCOMOTIVE MANUFACTORY AT CARLSRUHE, IN THE GRAND DUCHY OF BADEN.

This manufactory is of the most complete construction, and well supplied with the necessary tools for employing 600 workmen—40 locomotives have been turned out complete in one year. It is situated near the Rhine, and adjacent to the Great Baden Railway, to which it is connected by a branch line. Its situation for obtaining the necessary products, and the sending off of the manufactured goods being most convenient.

This manufactory cost 648,262 florins.

SEALED TENDERS TO BE FORWARDED TO THE TRUSTEES of "Machine Factory, Carlsruhe," on or before the 7th June, 1852, on which day, at Ten o'clock A.M., the tenders will be opened in presence of the tenderers, and arrangements will be immediately made to transfer the said property, provided the biddings are up to at least the sum of 215,000 florins.

Particulars of stock, &c., may be had on application at Carlsruhe.

URANIUM ORE—SALE BY TENDER.—A QUANTITY of about 6300 lbs. Avarian weight, lying at the AUSTRIAN IMPERIAL MINES, JOACHIMSTHAL, in BOHEMIA, is TO BE SOLD, BY TENDER, to the highest bidder. Tenders to be sent in, on noon, on the 20th June next, to the "Board of the Imperial Mines," at Vienna.—Full particulars as to the conditions of sale, &c., &c., may be had on application to Messrs. Aug. Faber and Co., merchants, 60, Mark-lane, London.

GAS WORKS TO LET.—Notice is hereby given, that the DIRECTORS of the BICESTER GAS, COKE, AND COAL COMPANY will be ready, on or before Tuesday, the 18th day of June, 1852, at Six o'clock in the afternoon, to RECEIVE TENDERS, sealed up, from such persons as may be desirous of RENTING the WORKS of the Company, situated at BICESTER, OXON, for the term of seven years, from the 1st of July, 1852, determinable at the end of three or five years.

The tenders are to be endorsed, "Tender for the Bicester Gas Works," and forwarded to the Secretary, at Bicester, at any time, before Six o'clock in the afternoon of the 18th day of June aforesaid, to whom all applications to view, and for particulars, are to be made.—Dated the 17th day of May, 1852.

GEO. HARRIS, Secretary.

DATA SAFETY FUSE.—The GREAT EXHIBITION PRIZE MEDAL was AWARDED to the MANUFACTURERS of the ORIGINAL SAFETY-FUSE, BICKFORD, SMITH, and DAVEY, who beg to inform Merchants, Mine Agents, Railway Contractors, and all persons engaged in Blasting Operations, that for the purpose of protecting the public in the use of a genuine article, the PATENT SAFETY-FUSE has now a thread wrought into its centre, which, being patent right, is fully distinguishable from all imitations, and ensures the continuity of the gunpowder.

This Fuse is protected by a Second Patent, is manufactured by greatly improved machinery, and may be had of any length and size, and adapted to every climate.

Address, BICKFORD, SMITH, and DAVEY, Tuckingsmill, Cornwall.

M. R. JAMES CROFTS, of 4, KING-STREET, CHEAPSIDE, MINING BROKER, OFFERS his SERVICES for the PURCHASE or SALE of MINING SHARES of every description—BRITISH and FOREIGN—and not being a dealer, transacts business only for principals.

Mr. CROFTS' weekly list comprises only such shares as he has actually on hand, or under control, but he may be consulted upon every description of mining shares, whether for purchase or sale. DIVIDEND MINES pay from 10 up to 35 per cent. per annum.

WEEKLY LIST OF SHARES FOR SALE.

Wheal Edward, Wheal May, Wheal Langford, Hindington Down, Wheal Arthur, West Caradon, Colonial Gold, Nouveau Monde, South Tamar, Wood Mine, Clive, Silver Valley, Crebore, New East Crowndale, Grass Wheal, Badfern, East Boringdon, Wheal Brower, Caradon Wood, Wheal Bodmin, Bodmin Consols, Wheal Golden, Okel Tor, Great Bryn Consols, Wheal Surprise, North Fowey Consols, Bedford United.

Mr. CROFTS has made arrangements with an eminent firm on the Stock Exchange to buy or sell in SHARES and MINES as are there dealt in, without any addition to the commission charged by Stock Exchange brokers.—May 21.

And also FOR SALE SHARES in MINES having a PROMISING APPEARANCE and affording greater range for speculation, such as—

Marilyn South Bassett South Frances South Tolgas Alfred Consols Trumpet Consols

Trelawny South Caradon Bedford United Tremayne West Providence

West Alfred Consols Cook's Kitchen Clapdale Santiago Copiapo United Mexican

Mining Offices, 33, Clement's-lane, Lombard-street.

M. R. T. P. THOMAS, MINE AGENT, 75, OLD BROAD-STREET.—Established nine years.—Mr. T. P. THOMAS begs to inform capitalists and the public that he is at all times in a position to BUY or SELL, at close market prices, in dividend and respectably establishes BRITISH and FOREIGN MINES; and having a local knowledge of the principal Cornish and Welsh Mines, from periodical personal inspection, &c., will be happy to furnish information by post or otherwise.

N.B.—Mines inspected and reports furnished.

L. OSH, WILSON, AND BELL, NEWCASTLE-ON-TYNE, MANUFACTURERS of BAR-IRON, RAILWAY BARS, FORGE and ENGINE WORK, CAST-IRON GOODS, and STEWART'S PATENT CAST-IRON GAS and WATER-PIPES. OFFICE, 7, HESLWELL, LONDON.

M. R. ALFRED SENIOR MERRY DEALER in COBALT and NICKEL ORES, and ASSAYER in GENERAL.—Address: LEE-CRESCENT, BIRMINGHAM.

M. R. THOMAS EDINGTON, INSPECTOR of RAILWAY BARS and CASTINGS, AGENT for the PURCHASE of PIG and BAR-IRON CASTINGS, &c., No. 17, Gordon-street, Glasgow.

RAILWAY WAGONS.—WILLIAM A. ADAMS, MIDLAND WORKS, BIRMINGHAM. IN STOCK—FOR SALE OR HIRE.

ROYAL HIBERNIAN MINES.—To suit the convenience of the Nobility, Gentry, Clergy, and other inhabitants in the district of these Mines, the GRAND FETE, in CELEBRATION of their OPENING, is POSTPONED from Saturday, the 29th, to MONDAY, the 31st of MAY instant. Chief Offices, No. 17, Gracechurch-street, London, May 31, 1852.

MONEY FOR MORTGAGE.—SEVEN THOUSAND POUNDS, at Threepence per cent., and a term of years, will be granted. This £7000 belongs wholly to Mr. Coward, who will not object to advance on Mines in England or Wales.—Apply by letter, free of postage, and only from principals, to John James Coward, Esq., Lansdowne-crescent, Bath.—May 18, 1852.

TO CAPITALISTS.—A CIVIL ENGINEER, who is about to CARRY OUT extensive WORKS of IMPORTANCE and great PUBLIC UTILITY, which will yield a large return upon money expended in their construction, is desirous of meeting with CAPITALISTS who will JOIN in the UNDERTAKING. Address by letter (pre-paid) to "C. E.," care of the Editor of the Mining Journal, 26, Fleet-street, London.

TO ENGINEERS.—WANTED, in an extensive IRON-WORKS, in SOUTH WALES, an ENGINEER, thoroughly and practically acquainted with the CONSTRUCTION of STEAM-ENGINES and MACHINERY.—Address "L. G.," Messrs. Bally Brothers, general advertising agents, No. 3, Royal Exchange-buildings, Cornhill, London.

TO QUARRY OWNERS, MERCHANTS, AND CAPITALISTS.—WANTED, by the Advertiser, aged 35, EMPLOYMENT as CLERK, SUPERINTENDENT, or AGENT—has served in each capacity, is practically acquainted with State Quarrying in all its details, and is quick at correspondence and accounts. References of the highest character.—Address "Q.," care of Shaw and Nelson, 7, Bryan-street, Covent-garden, London.

WANTED.—A SITUATION as VIEWER, or GROUND BAILIFF, at a COLLIERY, by a middle aged Person, who has had many years' practice in the county of Durham. He is thoroughly acquainted with the best modes of working, ventilating, &c., and also has had much practice in surveying, mapping, &c. Satisfactory references will be given.—Address "A. B. R.," care of the Editor of the Mining Journal, 26, Fleet-street, London.

WANTED.—A PERSON to JOIN in a COKEING COAL COLLIERY, of the first quality, who can command £3000 or £4000. The colliery will be situated on the side of a conveyance to the port of Newport, Monmouthshire; also, the coke or coal can be conveyed along the loop line to the Midland Counties, Birmingham, &c., at nearly half the distance it is now brought down from the north of England.—Address "A. B.," care of the Editor of the Mining Journal, No. 26, Fleet-street, London, where full particulars will be furnished by the advertiser.

WANTED.—NEW or SECOND-HAND, a 40-horse STEAM ENGINE, adapted for PUMPING and WINDING.—Also, a WATER WHEEL, 40 feet diameter, and 3*th*s feet broad, with 24 stamp heads attached.—Apply to "A. B.," 4, John-street, Oxford-street, London.

SECOND-HAND STEAM-ENGINE WANTED, for WHEAL FANNY, in the parish of BRIDESTOWE, DEVON. The size must be at least a 40-inch cylinder.—Full particulars and price of the same, with boiler, &c., complete, delivered on the mine, to be sent immediately to Mr. J. H. Murchison, No. 26, Threadneedle-street, London.

RAEAD CONSOLS, MINE, TOWEDNACK, CORNWALL.—WANTED, for the above mine, a SECOND-HAND ENGINE, of from 25 to 30 inches cylinder, to be adapted both for PUMPING and STAMPING, in good condition, and to be delivered on the mine.—Tenders to be sent to me, at No. 5, Adam's-court, Old Broad-street, London.—May 16, 1852.

GEORGE FENTON, Secretary.

ENGINES AND PUMPS, FOR MINING PURPOSES, FOR SALE.—A strong, simple, and well-made PORTABLE STEAM-ENGINE, of 20-horse power, mounted on wheels, with return tube and chimney, ready for immediate work.—Some large PUMPS.—A PORTABLE 8, 10, and 12-horse power ENGINE, on the same principle.—Also, several STATIONARY ENGINES, of various powers.

\* ENGINES AND PUMPS LET ON HIRE. Apply to Messrs. Medwin and Hall, engineers, No. 32, Blackfriars-road, London.

LEAD MINE.—TO BE LET, a valuable LEAD MINE, on the property of William C. Quin, Esq., in the county of ARMAGH, in IRELAND.—Apply to Messrs. Stewart and Kincaid, land agents, 5, Leinster-street, Dublin; or to R. T. Nevill, Esq., Llanelli Copper Works, Carmarthenshire, under whose direction the preliminary trials have been made.

STEAM COAL COLLIERY TO BE LET—also, a BITUMINOUS COAL-FIELD: outlay of capital moderate.—For particulars apply to Mr. W. Price Struve, C.E., Swansea, Glamorganshire.

TO COLLIER OWNERS AND VIEWERS.—R. HENDERSON is prepared to SUPPLY his IMPROVED SAFETY LAMP to any extent, which gives increased light with greater safety: price £2. 6d.—Apply to Sotherton's-buildings, Monkwearmouth Colliery, Durham.

GREAT BRYN CONSOLS.—TWENTY SHARES in this most promising MINE FOR SALE, at 3*th*s. per share.—Apply to "A. B.," 26, Fleet-street, London.

FOR SALE—ONE HUNDRED SHARES in EAST BLACK CRAIG MINE, at 8s. 6d. per share.—Apply to Mr. J. H. Mervell, No. 26, Hangle-alley, London.

ST. JOHN DEL REY MINING COMPANY.—The TWENTY-SECOND ANNUAL GENERAL MEETING of the proprietors of the ST. JOHN DEL REY MINING COMPANY will be HELD at the Company's office, 8, Tokenhouse-yard, on Friday, the 4th June, at Two o'clock precisely. At the meeting one Director—viz., Edward Harry, Esq.—will go out by rotation, but is eligible to be re-elected.

JOHN ROUTH, Managing Director.

TO MINING COMPANIES, AND OTHERS.—MR. KNIGHT offers his SERVICES as a SHORT-HAND WRITER, to report

## Original Correspondence.

## THE COPPER MINES OF LAKE SUPERIOR.

SIR.—Ontonagon River, the largest in this district, crosses the trap range about 100 miles west of Keweenaw Point; its branches are said to drain an area of 1300 square miles. The distance from its mouth to the mineral range is about 15 miles, but the elevated position of the region renders it for the most part unfit for navigation. Boats, however, are pushed up some of its rapids, so that merchandise is delivered about 15 miles from its mouth, and copper brought down by return. The mouth of the river has already become a place of much importance, being the principal shipping port of the district. This district embraces several mines, the whole of which may be said to be in their infancy, and most presenting very encouraging prospects. The largest of these is that of the Minnesota Mine, situated on the trap range, some two miles east of the Ontonagon River, and 15 miles from the lake. The trap range here runs in a north-east and south-west direction, and attains an elevation of about 700 ft. above the lake. Like the range of Keweenaw Point, they are flanked by sandstone and conglomerate, dipping towards the lake. The conglomerate is also observed in the middle of the range at this point, and the mine is situated on the north division of the trap range. The lodes in this district belong to a system totally distinct from those of the Keweenaw district. The latter crosses the formation at nearly right angles; the former has a course and inclination nearly conformable to the accompanying rock in which it exists. The lode at this mine is composed of epidote chlorite quartz, calcarous spar, a portion of decomposed country rock, and native copper in masses, spangles, lumps, and small particles scattered through the epidote, but more particularly associated with the quartz. As in the Cliff Mine, the masses sometimes fill the entire vein from wall to wall. About a month since I visited this mine, and saw the place from whence one of those gigantic masses had been extracted, weighing upwards of 70 tons; a larger one, weighing over 100 tons, had been raised but a short time previous from another part of the mine. The country is a grey amygdaloidal trap, coarse-grained, boulders and blasts freely, rather firm and compact, divided by joints into large blocks, what miners call big heady ground. The lode varies from a few inches to 3 and 4 ft. wide, and may be considered about 2 ft. wide on an average, bearing 40° north of east, underlying 38° to the north. The mine is 32 fms. deep, and about 100 fms. long; the lode is well defined, and has been traced upwards of a mile in length at surface; the concern is pierced by four shafts, is well ventilated, and the works appear to be conducted with good order and satisfaction. The estimated returns are about 50 tons of copper per month, worth (say) \$300 per ton, equal to \$15,000. The working expenditure for the like period is \$6000, leaving a surplus profit of \$9000 per month. The machinery on the mine consists of a small steam-engine, 12-in. cylinder, 22-in. stroke, driving 12 stamps-heads. The stuff and water is discharged from the mine by horse-whims, the latter not exceeding many barrels in 24 hours, such is the dry state of the mineral region. The lode stuff is all roasted on large heaps of corn wood, not to evaporate the sulphur, for there is none present, but to free the copper from the rock, making the latter more friable, and freer for stamping. After it is roasted it is spalled over, the small masses and lumps of copper are extracted, and the remainder, yielding 11½ per cent. by estimate of fine copper, is put through the stamps, and undergoes the ordinary method of dressing.

The superintendent of this mine is a Mr. Roberts, from Hartford, Connecticut; and the chief underground agent is a Capt. Harris, from Illogan, Cornwall. The working miners consist of Cornish, Irish, Germans, French, and Americans; but the greatest number are Cornishmen throughout the region. In this district, miners work 10 hours a day; hence there are but two shifts, or cores, in 24 hours. The general rate of miner's wages is \$1 a day, free of board, or \$35 and boarding himself. Nearly all the mining work, however, is done on bargain account; and, generally speaking, men have long extents, upon which they naturally work more manfully, and, consequently, their gettings exceed the average rate—say, from 27 to 32 st. when boarding themselves. Provisions are imported to the mines from the markets below by the mining companies, as also all other supplies necessary to carry on the operations. It is likely, however, that, as great inducements are held out here to agriculturists, in the course of a few years the miners will be better accommodated. The winters are a little lengthy; but a better climate cannot be. I do not remember ever having enjoyed better health in all my travels than since my residence in this region.

There are several other productive mines in the district; and the region generally presents a vast field of copper veins, to all appearance of unlimited extent, possessing copper enough for all the world. Further descriptions will be given in my future communications. J. B.

Ontonagon, Lake Superior, Michigan, March 18.

## THE BRAZILIAN GOLD MINES.

SIR.—Being fully acquainted with the working of the mines in this country for 30 years and upwards, I send you an extract from my journal, for the information of those interested:—

GONGO SOCÓ MINE was commenced by an English company in 1826, and much gold has been extracted: although not so rich in gold for the past two or three years as before, the working of the mine for the latter period is well worth attention.

CATA BRANCA MINE was also good for produce, but owing to the late chief agent not being allowed to manage as he wished, by the directors interfering with his duty (which is too often the case in this country), the mine was allowed to come together, and was knocked. It is now being worked by the Brazilians, and doing exceedingly well.

The CANDONGA MINE is now very rich for gold, and is also in the hands of the Brazilians—the English company not having spirit to carry it on.

The BELTA FAMA MINE was knocked in 1833, and not worked since, although there is no doubt of its being one of the best mines in the Brazils. The stopping of this mine was occasioned by the capital being exhausted in the luxurious habits of those employed, and in building houses and making fine walks, instead of business operations.

COCAES AND CULARA MINES are the most ancient and extensive. The workings for the last 20 years and upwards have been carried on by Messrs. E. Oxenford, W. Hamilton, and Co. I believe Mr. E. Oxenford first made a purchase of Gongo Socó estate, and then Cuiabá and Cocaes, for which he deserves much credit: he has been a great employer here, and his name stands high through all the country, and well has he merited it,—although I lament to say the mines have hitherto proved rather poor; but I hope he will meet with more success from future operations.

In conclusion, I may remark that much of the evil experienced by mining companies would be avoided by bestowing greater care in selecting officials—doctors should not be allowed to act as directors, and other qualifications required than being young men, or friends of the management at home; in fact, no director is wanted. You are not now to learn that in England, Ireland, and Wales, there are mines of far greater magnitude than any in this country, and each one governed by the chief mining agent. If such was the case through this country, I feel convinced every adventurer would have a profitable surplus produce for his outlay.

March 28. A LOOKER-ON.

## RUSSIAN SHEET IRON.

SIR.—As your readers may not be aware of the fact that Russia has a peculiar method of manufacturing sheet-iron, which they have hitherto succeeded in keeping a profound national secret, and knowing how anxious you are to make public every improvement in manufacturing connected with the metals, perhaps the following information may not be unacceptable. The production of this peculiar quality of iron has hitherto been monopolised by the ironworkers of that country; but it would appear that either the Russian secret is discovered, or that experience has produced a similar iron in America, quite equal in quality, and perfectly successful under every test. It appears that Messrs. G. J. H. Shoenborg and Co., of Pittsburgh, Pennsylvania, citizens of St. Louis, Missouri, have presented a memorial to Congress, through Mr. Broadhead, requesting the passing of a special law, securing to them for a certain period the sole manufacture of sheet-iron, which they term "Russian." They state that they have acquired the knowledge of the means of its manufacture, but that under the patent laws of the United States they cannot obtain a patent, they not being the inventors, and the material being produced by a similar process to that hitherto adopted in Russia. They further state that, unless a special Act of Congress secures to them for a time the exclusive manufacture of the article, rival establishments will spring up in the United States, and the competition thereby engendered would deprive them of the realisation of an adequate remuneration for labour and expense in obtaining the process. It is highly probable the secret may yet transpire, or that some very simple mode of manipulation may be discovered in this country

for the production of this first-rate quality iron, the manufacture of which would so greatly lessen the price of the article, and bring it into general use. It may be nearly the admixture of a small portion of some of the metals, metalloids, or other elements, and is well worthy the attention of metallurgical chemists. The great feature of the iron is an extraordinary ductility, by which it can be worked with facility into the most difficult shapes.—TELLURUS: Walsall, May 18.

## THE "MEGARA" TRANSPORT.

SIR.—Our ears have scarcely ceased to tingle with the terrible tales of the *Amazon* and the *Birkenhead*, when fresh agitation arrives in the intelligence that the *Megara* steamer has escaped to her destination after being several times on fire, and consuming all her coals in half her voyage. The *Times* tells us expressly these are not accidents—that the disasters of Government steamers are a general rule, occurring *semper ubique ad omnibus*; and it seems high time that this general rule should be investigated and understood. Earl Dundonald has declared it. He stated in the *Times* of the 13th of January last that the *Amazon*, and all steamers under Government supervision, are fitted with little more than *half* the requisite boiler power; hence the danger of furious firing, with enormous waste of fuel, in order, if possible, to obtain an adequate supply of steam from an inadequate instrument. When we consider how many useful inventions have sprung from this family—that the late Earl was the father of gas lights—a very heavy responsibility is incurred in slighting any illumination proceeding from such a quarter. Something it is certain must be done. The only question is, shall that something be useful or useless; to the purpose or not?—May 18. — DAVID MUSHET.

## THE ABERDARE EXPLOSION.

SIR.—I should much like to know how many of the sufferers by this shocking explosion had effected insurances on their lives? Surely, nothing could form a more efficacious part of the instructions to inspectors than that they should press this subject upon the attention of both masters and men. For a small premium, deducted monthly from wages, of about the same amount as the usual doctor's charge, 8000/- might have been now divided among the relatives who survive under such a load of calamity! Of the whole 64 lost is there one single life assured?

DAVID MUSHET.

ERRATUM.—In the letter on this subject, last week, for "matter of fact," read—"matter of fact."

## THE ACCIDENT AT THE KILVEYMOUNT COLLIERY.

SIR.—On referring to the *Mining Journal* of the 8th May, I find an erroneous statement—that I approved of the works of the Kilveymount Colliery, and attached no blame to the parties concerned in the irruption of water. I must beg you to contradict it in your next Number.

Aberdare, May 18. — HERBERT F. MACKWORTH.

## PREVENTION OF EXPLOSIONS IN COLLIERIES.

SIR.—I have observed with deep concern the many calamitous colliery accidents lately recorded in your columns, with the fearful loss of life attendant thereon, and beg to make a suggestion whereby the pernicious influence of the fatal after-damp—from which by far the greatest number of victims perish after explosions—may, to some extent, be avoided. On the occurrence of an explosion in the distant workings of a mine, we find that those individuals who have escaped mortal injury from the direct action of the flame, or the overwhelming force of the accompanying blast, instinctively hurry to the bottom of the shaft (generally the *upcast*) for escape; but, alas! as in the recent lamentable instance at Aberdare, only to perish from the deadly influence of the poisoned air which has surrounded and accompanied them in their course on the return *airway* from the scene of disaster. Now, the suggestion and advice I wish to offer to all persons so situated is this, that on the occurrence of an explosion, they immediately and invariably attempt to make their way out of the mine by the intake *air-course*, and not on the usual travelling ways where these are the returning *air-courses*, as, by adopting such a course, they would meet any fresh air that might be still making its way into the mine, and also avoid the fatal error of travelling in the very company of their deadliest enemy. Should a fall of roof, or any obstruction, prevent their immediate passage into the intake *airway*, I would strongly advise them to make their way into the same at the very first practicable opportunity; and I have no doubt, should this plan be hereafter adopted in cases of explosion, many lives would be spared, and those harrowing scenes be avoided where, as at Aberdare, piles of the dead were found suffocated within 100 yards of the shaft, overcome by the mephitic influence of a polluted atmosphere, which had clung to them from their very outset from the original source of this sad scene of calamity and death. I would most respectfully, yet earnestly, entreat every viewer and underground manager to impress on the minds of his workmen attention to this obvious rule of safety, as there is good reason to believe, if generally observed, it would tend much to obviate one of the most fertile and fatal sources of danger to which the working miner is exposed.—THE BLACK DIAMOND: May 19.

## ON PREVENTIVES OF COLLIERY ACCIDENTS.

SIR.—The excellent service you are rendering to the cause of humanity by your able articles upon accidents in coal mines, induces me to offer a few observations and suggestions that may be worthy consideration at the present time. Upon reviewing the reports of the inquests which so constantly appear in the public prints, we find that the verdicts of the juries are especially remarkable for avoiding any strictures upon the management and working of the mines, while blame is invariably cast upon the poor ignorant miners (the victims who can no longer answer for themselves), by charging them with using candles, and with abusing the use of the Davy lamp. The next striking point is the unequivocal assumption that the Davy lamp is infallible, notwithstanding Sir Humphry's express reservation against it, and the fact that, upon actual experiment by competent persons, it has been exploded at the rate of 60 times in a minute. We then find that, in order to economise in the working of the present expensive systems, numerous and various duties devolve upon one man, who is often aged and otherwise incapable. In no cases do there appear to be any working plans of the collieries within the comprehension of those to whom the mines are ordinarily intrusted. And, lastly, it would seem that even the check of inspection over the complicated systems is so inadequate that one inspector alone has from 2000 to 3000 mines under his charge.

Now, let the verdicts of juries be as silent or laudatory as they may, there are few in these days of science who will believe that colliery accidents do not mainly arise from preventable causes; and if this is once admitted, it behoves every friend of humanity to co-operate in promoting inquiries that may lead to efficient remedial measures. With this conviction, I beg to offer the following suggestions:—

In the first place, if the owners and viewers are satisfied that the Davy lamp is safe and efficient as a light, why are candles, which they admit to be dangerous, ever supplied to light the works? Those who supply the candles, and not those who use them, are surely the culpable parties, and should be punished accordingly. I would next recommend that a public experiment with every description of safety lamp be forthwith instituted, with a view to testing them by all the possible contingencies that may ever occur in a mine. Also, that an inquiry be made whether a more efficient and less expensive system of working collieries, independently of safety lamps, is not practicable. And, finally, that it be made obligatory for every owner to lithograph the working plans of all his collieries, and to place copies in the hands of each of his overmen, and others in his employ, for their private instruction, so as to make them thoroughly conversant with the works. A sufficient number of copies of these working plans should be deposited in the Museum of Practical Geology, to be supplied to those who might apply for them, with the objects of ascertaining the causes of or liabilities so explosion, and of suggesting suitable remedies; and any departure from the plans so deposited, without due notice, should be subjected to the heaviest penalties. A free promulgation of working plans in the way proposed would facilitate the investigations of the inspectors of mines, and this, by greatly reducing their labours, would lessen the number of officers otherwise essential to be employed.

JOHN MARTIN.

Lindsey House, Chelsea, May 18.

[We have received many communications on this subject, for which it is impossible to find space for insertion. They generally agree in deprecating what is termed "too much the fashion recently" to attribute all these deplorable calamities to the recklessness and foolhardiness of the men; while the primary causes of the accidents are overlooked. The too prevalent practice of relying for perfect safety on the Davy lamp is also dilated upon; the use of candles permitted where paramount danger exists; and the parsimony too often exhibited by the owners in not employing proper persons as managers and viewers, but leave the men to get the coal in their own way, ignorant or contemptuous of danger, unassisted by the least experienced and scientific instruction. While

we acknowledge with much regret the general truth of the observations contained in these communications, which we have received from really practical leaders, and which will be found more fully expressed in some observations in our leader page this day, we cannot blind ourselves to the fact that the letter of Mr. Edwards in the *Times*, which has given rise to them, is, to some extent, too true. The daring carelessness and obstinacy by which the rules of the colliery are occasionally evaded, or openly defied by the men, is too notorious to be denied or excused. In some instances, where candles are forbidden, they are secreted about the person and set light to by the aid of lucifer matches; the tops of the lamps are heedlessly taken off, pipes are lighted with as much *ang froid* as if the men were working in the open air, instead of in an atmosphere as readily combustible as gunpowder. We cannot help to a certain extent agreeing with the writer, that however necessary scientific investigation and inquiry may still be, any radical remedy for the danger should come from the men themselves. His suggestion to form themselves into anti-danger clubs is good; and if they would pledge each other to use every means to avoid danger, and combine to secure the absolute immediate discharge from the works of every man who recklessly infringes the rules for safety, we believe these dreadful calamities would be far less frequent. We agree with our correspondents that, with perfect and sufficient ventilation, the gas would be so diluted as not to be explosive; but we have seen how almost instantaneously blowers will foul a mine and cause an explosion; and the great step in the right direction is—teach the men caution, and an appreciation of the danger which surrounds them.]

## GOLD REFINING.

SIR.—In the letter from Mr. Longmaid, which appeared in your Journal of Saturday, he says—"I may, therefore, at once admit that I am aware that it has been *proposed* to smelt *some* descriptions of minerals containing gold, and, as your correspondent remarks, profitably." Now, Sir, for a person who professes to have had 12 years' experience "in the pursuit of gold," it shows a shortcoming somewhere. If his experience had been of a practical nature for 12 hours in a Birmingham or Sheffield refinery, he would know that this fact is actually accomplished, not "proposed." All (not "some") ores of gold and silver are thus treated, together with such sweepings and lemel (polishings) as are collected from the various gold and silversmiths' factories in this country, and even the old melting-pots from the Royal Mint. When stock is taken at these refineries, the very furnaces are pulled down, ground up, assayed, value placed to the credit of the firm, and treated as native ore. I think, therefore, that he can no longer evade admitting that what I have before stated is substantially correct—viz.: that extracting gold from ore by smelting or fusion "is not new." If there be any further doubt, I refer him to a recent number of the *Household Words* (97), in which the process is truly, if not scientifically, described.—SEPTIMUS PIESSIE: Chapel-street, Marylebone, May 18.

## EXTRACTING GOLD FROM QUARTZ.

SIR.—In your publication of the 15th instant, I observe a letter from Mr. Longmaid, which very much amused me, and has, doubtless, caused many other persons to smile. His idea of reducing gold ore at 10s. per ton is really "rich;" and the contents of the scoriae, calculated at 5 grs. of gold in a ton, is *richer* still. These assertions will not pass in England; and the possibility of such an occurrence in Australia is preposterous. I conceive Mr. Longmaid could not have devised a better scheme for demolishing his patent than in the publication of the letter referred to.

Bath, May 20. — A PRACTICAL MAN.

## COPPER TRADE—COALITIONS OF THE SMELTERS.

SIR.—There is a very general—I may say, universal—opinion amongst the numerous and respectable parties in the City who are interested in Cornish mines, that the copper smelters are, *totidem verbis*, a set of unprincipled persons, banded together to cheat the miner; and I have found it of little avail to attempt to show to the contrary, or advance anything in favour of the system of ticketing for copper ore, which is denounced as a delusion by those who are only too ready to rush to a conclusion, or by others who, from private motives or feelings, abuse "the smelters." There is, however, another class of persons, of high standing and character, who are much above all prejudice; who know correctly, and judging calmly, contend that the copper miner is not dealt with fairly. I am free to confess that appearances are much in favour of what they say. Let us, however, consider the principal grievance complained of—coalitions of the copper smelters. I am ready to admit that such have been often repeated, but I am not prepared to admit that the effect has been hostile to the mining interests, or exclusively beneficial to the smelters; but, on the contrary, I contend that the object of such coalitions has been generally that of supporting prices, under circumstances of great pressure on the market, or of a crisis in monetary affairs; and where they have existed except for such objects, and from purely selfish ones, they have invariably been short lived, and have met with the fate such combinations richly deserve.

I would go *seriatim* into this part of the history of the trade, from the disturbance of the connexion between Messrs. Williams and Grenfell, and Messrs. Vivian and Sons, in 1813, up to the present period, which would bear out by facts what I have here asserted, had such been necessary to the purpose; but, unconnected as I am at present with the copper trade, and—as a Cornishman—with a natural bias towards our mines, my testimony and assurance on this head will, perhaps, suffice.

I note, in your paper of last week, the fact of the chairman of the ticketing of the 13th inst. having vacated the chair in disgust, &c.; and as I am convinced that gentleman would not have done so except for good and special reasons, I am not prepared to deny that the meetings before ticketings, which are held at the private residence of the agent of Messrs. Free-mans and Co., may not partake something of the character of an *Unholy Alliance*; and if so, I am convinced that such must, from their very essence, be short lived, and their consequences retributive. THOMAS I. HILL.

Gray's Inn-square, May 18.

## SMELTERS AND MINERS.

SIR.—Knowing that you deal out even-handed justice in all discussions connected with mining and its adjuncts, and as there have appeared many communications in your columns from the mining community, which go far to throw discredit upon us, as smelters, we deem it a duty incumbent on us to vindicate our characters, and if possible put the public mind right upon this vexed question. We believe it will be acknowledged by all hands that it is the first consideration with most manufacturers, who have been pretty successful, to secure every vantage ground against a competitor, and more especially if he be one of those who produce and sell the raw material. This is a line of policy we have pursued for a long while, and one which we intend to adhere to in future, if possible; and it is not astonishing that we meet with so much censure from the miners—the very parties of whom we purchase the ores?

Some time ago we, in order to put a stop to all further intruders on our business, thought it proper to rent the Forest Copper Works: this, after mature consideration, we have done, agreeing to pay 1500/- a year sleeping rent; but no sooner had we secured these works, and locked them up, than we find one of the foreign miners actually commencing to build new works, for the avowed purpose (if you please) of smelting his own ores, and, for ought we know, other ores also.

Now, Sir, is this a state of things that we ought to expect from parties with whom we have been doing business for so long a time? Besides, we have other complaints to make. It is not long ago that we were obliged to pay 5391. 19s. for silver contained in a parcel of 58 tons of copper ores, over and above the value of copper—the whole of which silver we used to receive without the least consideration. This is a serious charge we have to lay against the miners.

Again, at the Redruth ticketing last week, before we had time to settle our little affairs, as we generally do, previous to putting on our tickets, the chairman, with most of the other miners, left the ticketing room, avowing their intention of withdrawing their ores, and supporting the new smelters—those very gentlemen for whom we pay 1500/- a year sleeping rent to keep out of the market. We might

diculous value of 750*l.* each; the dividends paid since would barely pay 5 per cent.; and knowing the result of dividends for 70,560*l.* paid in 14 months, at Treavean Mine, to end of Dec., 1853, caused shares to sell at 230,400*l.* for the mine (which it took seven years to realise), since which not 1*1/2* per cent. has been received, and that they are now actually making calls, I recorded my sentiments in your Journal, the same as then, and the question will soon be apparent—whether 307,200*l.* is too much, or too little, for Devon Great Consols? If my friend, Capt. Richards, can contravene my statement, I will immediately knock under, and the earlier he can enable me to do so, he knows, the greater will be the satisfaction to all true and legitimate miners (our mutual friends) as well as myself.

In conclusion, I may here remark, that there are nine other concerns in the locality, that of late have been soaring upwards most unwarrantably in price, according to the quotations in your Journal, and parties will do well to consult a mine agent before purchasing a share in any of them, if the paucity of sales of mineral from them is not sufficient to deter buyers from paying large sums for shares, with the certainty of calls *ad infinitum*.—ARGUS: Truro, May 20.

## MINING ECONOMY—SINKING AND OPENING THE MINES.

SIR.—Among the dozens of economies yet practicable in mine operations, one of the most important is the quickest mode of sinking the shafts and opening the levels, ventilatings, cross-cuttings, and other dead workings. This object ought to have been one of paramount aim with all practical mine captains, but even unto this day they have been content to waste money and fritter away time by working the ground in the same dilatory way as their forefathers for centuries back, and leave the consideration of the importance of time and ingenuity of operations to “those dreamers of theory and new-fangled improvements who, after all, had better mind their own concerns, and not interfere with us practical men.” Well, be this as it may, the economising time in mining operations is the very life-spring of success; and although many of the mine captains of Cornwall, Devon, and Wales, especially reprobate all attempts at the introduction of machinery for the economical and quick sinking and “driving” the ground, there have long been at their command various means of superseding the tedious hand labour of sinking and cutting the rock, at very much less expense and in less than a third part of the time they now take.

Had it not been for a well-known kind of indolent indifference to suggestions for improvements by “foreigners,” the mine captains ought long before this time to have applied water, steam, gas, compressed air, either one or all of them, to the cheap cutting, sawing, scooping, boring, and breaking the levels and shafts of the mines, in the quickest possible time, instead of remaining until this period with only the ancient clumsy, tedious, and expensive pick and gad and hand-barrow. The application of fixed or portable mechanical means for the quick cutting of the rock would, of itself, make at least 50 per cent. difference in the amount of the onset outlay for the unproductive approach workings. Then there will be a saving of 75 per cent., if not very much more, of the time now taken to open the mines into effective produce. There will be proportionate accelerations of the future sinkings, ventilatings, and cuttings, and a quick increase of produce, with a consequent lessening of the aggregate expense of fuel charges and agency cost of every sort, the divided profits much earlier and larger. These are important considerations, but they are not the only advantages derivable by the application of compact machinery to rock cuttings and opening up of our mines.

The mechanical arrangements may be supplied with cutting, sawing, scooping, and other appliances, appropriate to the nature of the ground, and to cut much of the rock in useful sizes, fit for building, pavings, or hedgings, instead of tearing and blowing into the present wholly useless fragments. In sandy rock, in tender growan, or in jointy and hackley slates, or killas, &c., there will be great economy, as the drifts, levels, &c., can be cut or scooped with smooth arched tops and sides, without, in any way, shaking or fracturing the short joints of the slate, or slate, or other hackley rock; and thereby secure a firm and safe drift, without the usual heavy expense of timber to support the present disjointed and shattered levels. The adoption of even the hand-gear borers, the drillers, or the teasers and devils of the railroad contractors and excavators, or those of the gas-fitters, and others of many engineers, would effect a great saving of time and expense in our mine cuttings and borings; but there is no excuse for the non-appliance of powerful mechanical means for the speedy openings and driftings into the productive portions of our mines.

Although this suggestion of means for the quick opening and sinking of mines is only one of the score of practicable economic appliances in mining, it will give the copper mine shareholder more profit on his investment at a future standard of 75*l.*, than he can now get at 105*l.*; but the increasing demand, year by year, of the metals, to keep pace with the multiplying population and chemical requirements of the world, indicate a rise instead of a fall in the prices of copper, tin, and lead, and, therefore, the British miner has every right to expect a bright future, if he will apply his ingenuity to the quickest and, therefore, cheapest means of production. This remains with the shareholders themselves, for if they wait for the practical mine captains they will never attain it. In the aggregate, there is an immense capital, and its remuneration at stake; and, therefore, much good might result from the appointment of a trust committee, to whose account an apportioned subscription should be paid by every mine, and every mine owner or lessor. This subscription to be apportioned as the committee may determine, in a way forming an inducement to engineers of every grade to give their attention and energies to the production of the most efficient machinery and appliances for the speediest mode of cutting, sawing, scooping, and opening of mine shafts and levels, or drifts, on condition that the best suggested plan be patented for the benefit of the inventor, who shall agree for the use of the invention by the subscribers, on such terms as may be settled between the inventor and the committee. This subject has already led me to a greater encroachment on your space than I intended; I, therefore, request permission to follow it up with further suggestions in your next Journal.

May 24.—GEORGE ABBOTT.

## ANGLO-CALIFORNIAN GOLD MINING COMPANY.

SIR.—We have been called upon frequently to give information to shareholders as to our position and prospects. We have avoided doing so, because we desired that our first announcement should be definite and wholly satisfactory. Our silence has been misinterpreted; on the one hand, it is believed that our intelligence has been of an ill-omened character; on the other, that we were keeping back favourable circumstances. Both opinions are fallacious. We could only have stated that our anticipations have each successive mail been disappointed, owing to delays beyond our control and that of our resident director in California.

The machinery would, in the ordinary course of events, have been at work in January; a defect in the boiler rendered a new one necessary; this caused a delay of two or three weeks. When complete and forwarded to the mines, it was caught on the road by the first rains of this season, and the roads becoming impassable, a further delay of two or three weeks succeeded. By the middle of February everything was up and apparently in working order, when our engineer found that some small additional parts were necessary before the working could be begun. These additions were ordered to be made at San Francisco, and Sir H. Huntley sent one of his superintendents to expedite their completion. The following extract from Sir H. Huntley's despatches, received by the last mail, will explain how further delay has arisen, and will show the actual state of things:

Keystone Vein, March 17.—I am rather uneasy about Mr. Macconochie. He left this place in order to expedite the order for the few things wanted to complete the engine on the 16th of Feb., and up to this hour I have only heard of his arrival at Sacramento. He had other duties to perform, which would have detained him beyond the period of the commencement of the rains, and I hope he has only been by them prevented from rejoining me here.

Keystone Vein, March 17.—Although I regret to say, in consequence of the state of the weather and country, I have no advance to report, since my last despatch (No. 20, March 7th); yet, I have the pleasure to state, that the rains held off yesterday, and that to-day, there appears a settled change in the weather for the better, and that if it continues fine, I shall send a messenger to-morrow to hasten up the very few light things which have been already mentioned in my former communications. The Board of Directors will have a better idea of the magnitude of the recent inundation, when I inform them that Marysville and Sacramento have been both completely under water. It is, however, my pleasure to inform you, that since my letter of the 7th inst., I have made several assays of the quartz and earth thrown out of the several openings on the vein, and that in every instance all my former statements have been verified—never having found less than 6 cents, and from decomposed quartz, from 18 to 27 cents to the lb. of rock. With this prospect before me, the delay which these untoward rains have occasioned harasses me very much. It may be some relief to the anxiety of the Board, if I repeat that in 48 hours after the arrival of the things wanted, the engine will be prepared to operate, and that as the weather appears to have become fine, it is most probable that it will remain so for some time, in which case I hope to make, at least, a report of some material and conclusive advances towards complete operation.

Marysville, March 19.—Macconochie has turned up again—he has been stopped by the weather. I am on my way to meet the mail, and make arrangements for sending up the other engine. I have found here the things we have been waiting for, and they go to the Keystone Mine to-morrow.

San Francisco, March 27.—I have to acknowledge the receipt of the following letters, which, in consequence of my having been detained so long in the mountains by the rain, came to me at the same moment. I here enumerate the letters. “\* \* Having, I believe, replied to those parts of your letters involving suggestions and questions, I will now state that yesterday week I sent everything to the mine, where, probably, they would arrive in two days. This will complete the engine, and the work would begin in a few days. The travelling across the plains is still hazardous, but they can be crossed with care.

March 29.—The soundness of the position of the Anglo-Californian Company is undoubtedly. By this time the engine must be operating, and it starts without a debt upon it beyond what may be due for half a week's wages or so—merely the current expenditure, which will be defrayed as soon as I return after the arrival of the expected mail.

For the information of those concerned, you will oblige me by inserting the foregoing accounts of the position and prospects of our company.

42, on street, Adelphi, May 23.—GEORGE COTTRELL, Chairman.

## MINING IN IRELAND.—No. IV.

Resuming our notes on the mines in that which is termed the Audley district, or mineral tracts belonging to Lord Audley, now about forming a portion of the estates to be sold under the Incumbered Estates Commission, we next approach

CAFFANACAILLY.—This seat lies immediately north of Cappagh Mine. The stratum is, however, of a more slatey nature than in the district already described, not being of that compact character as in the instances referred to, and cannot be said to hold out the like prospects of productiveness. Some few coal pits have been sunk, with indications of copper ore, but no quantity raised.

STOUR.—This adjoins the former to the east, being bounded on the south by Ballydehob, the stratum being of like nature as the former, and also the mineral indications.

COORAGUERTIE immediately adjoins the Ballydehob Mine, a short distance from the village of that name. The lodes on this property have not been opened upon, but from its proximity to the Ballydehob Mine, which latter has been worked to a profit, but at present idle, owing to some dispute, there can be no doubt but that the same lodes pass into it. The ore raised from the Ballydehob Mine, which is a distinct property from the Audley estate, sold at 6*l.* per ton, but, doubtless, would have realised 25 per cent. more if properly dressed. The nature of the rock is a blue slate, and going west is found standing on edge, and cannot be said to hold out much promise for mineral.

DERRAGONNELL adjoins Cooragurteen to the west and south. No mineral veins have been discovered, but stones of a substance resembling manganese have been found scattered through the bogs.

GURTEENROE.—Nothing has been discovered in the shape of minerals, although it is possible that the lode coming into the last-mentioned seat from the Ballydehob Mine may pass through it.

RANNENOE.—No minerals have here been discovered, but detached lumps of the like nature as those found in Derryconnell are to be seen at surface.

The above properties constitute the Audley estates, in the parish of Skul, containing upwards of 3500 acres, the principal mining ground being well situated, as affording facilities for driving deep adits, as also shipment of the ores. The quality of the ore is of a superior nature, and the ground easy for working. Having treated on the Skul property, which, as we have already observed, holds out the best prospects to the mining adventurer, we next arrive at the Castlevane district, which, however, does not indicate much promise or inducement for the employment of capital in mining pursuits. It may be said to be, however, comparatively unknown, and may be worthy of a careful outlay in exploring the untried ground.

NORTH AND SOUTH REENS are situated in the parish of Miroas, on the eastern side of Castle Townsend Harbour. In the southern cliff are two veins, but which do not appear to partake of a mineral character.

TOSNAZ.—In the cliff three lodes are visible, ranging nearly east and west, and underlying north, being composed of quartz, stained with iron, but not containing any mineral. The stratum is a whitish lode or clay-slate, likewise dipping north. At the surface detached lumps of bog iron, impregnated with manganese, are found, and in small beds of 8 to 10 in. thick. At Maultidevin similar beds are observable near the sea shore. This property may be said to present facilities for working the mines, and peculiar advantages, as depicted, not only from the nature of the ore being of high produce, but the immediate contiguity to shipping ports, and the nature of the ground affording the opportunity of driving adit levels, and thus rendering machinery unnecessary, as well as the cost of working the same. The freights to Swansay may be taken at 7*l.* to 9*l.* per ton. Rates of labour are low, miners being paid from 8*l.* to 9*l.* per week; labourers, 1*l*. per day; women and boys, 4*l*. to 6*l*. In addition to the minerals already named are to be added the slate quarries and those of freestone, one of the former of which has been opened at Cappagh, close to Audley Cove. The vein, which is very limited in width, not exceeding a few feet, is of good quality, and has been opened about 300 yards in length; but, from the cost attendant on the removal of so great a quantity of rubbish by which it is encumbered, could not be worked with profit or advantage; indeed, the sides would appear to be disordered or crushed rock, and thus render it only useful for local purposes, as worked on an insignificant scale. There are other slate formations on the Skul property, but of an inferior character; the slate would, however, answer for local demand, or covering farm buildings. The slate quarries at Trecartha and North and South Reens appear to be the same rock, taking a course nearly east and west, and dipping about 35*l* north. The vein has been opened upon in both these localities at different points, varying from 8 to 15 ft. in width, the quality is harsh, and of a dark bluish colour. The workings are from 50 to 60 yards in extent for the width of the vein. Some of the slate is better adapted for flags or flooring than for roofing, but cannot be considered as worthy of export, so that the demand must be local.

Having thus gone over our notes on this property, we again made Skul our head quarters; and proceeding from thence west about 10 miles we reach Rock Island and Crookhaven. The road is good, and the scenery to the north bold and interesting, while on the south and west are fine views of the broad Atlantic. Between the village of Goleen and Rock Island, at Colleva and Spanish Cove, are to be seen lodes and veins which, we are informed, are shortly to be opened. Rock Island is situated at the north side of Crookhaven Harbour: it is a pleasant spot, and the coast-guard buildings, Post-office, and other residences look well from the opposite side of the harbour. Crookhaven is at the south side, and, though now but a dilapidated and dirty village, was once a place of considerable importance. The harbour is good and commodious, and much frequented, during easterly winds, by vessels from all parts of the world—there having been very recently upwards of 50 ships of large tonnage at anchor in the harbour. It appears that “before the rebellion of 1641, a large fishing establishment was maintained at Crookhaven by Sir William Hull, of Lymos, a member of the Council of the Province of Munster. His deposition, preserved in the library of Trinity College, sworn the 22d of October, 1642, states, that on or about the 5th December last past, and divers times since the rebellion, he lost, was robbed, and forcibly dispossessed of his goods and chattels, to the several values there following:” and he begins by enumerating a long list of the robbers—the first of whom he calls “Great O'Mahowne, also O'Mahonoon Poone, of the parish of Kilmoe.” He also mentions “Denis Rough O'Mahowne, Lord of the Castle of Duuanos, and Dermond O'Glaick, also Dermond Cartye, of Dunbeacon Castle, Gent., and William Candler, of Skul, an Englishman and Protestant, lately turned Papist.” These (he says), with 700 or 800 other rebels, came about Christmas last, or a little after, and drew themselves to a head, and besieged the castle and town of Crookhaven, seized on all the inhabitants' goods in the town (but what the townsmen had shifted into the castle), amounting to a good value; besides they seized on a culverin of his Majesty's, spoiling part of the houses and fishing cellars. After the rebels were beaten out of the town, and a ship employed to bring away the distressed people (almost famished), the captain of the ship (Capt. Cole), by command (as he pretended) from the Parliament, fired and burned both castle and town of Crookhaven, with all the fishing cellars, which cost about 350*l.* in building. The aforesaid Capt. Cole fired and burned Lymos Castle, and also the town of Skul, belonging to Sir Wm. Hull. These rebels also carried away, out of Sir W. Hull's fishing cellars, above 800 barrels of new salt, for which he paid to Mr. John Colleton, of Exeter, merchant, 7*l*. 6*l*. for every barrel, besides petty charges of landing and custom—in all, 300*l.*.” At present, we regret to say, that we find no traces of castles or fish cellars, curing establishments, or anything of the kind; and it would appear that all industrial pursuits had retrograded since 1641 to the present day. Let us hope, however, that the working of the mines in this locality may lead to the resuscitation of the fisheries, and that Crookhaven may eventually become a second St. Ives. Nature has done much, and it only requires energy and perseverance at the hand of man to make Crookhaven what St. Ives is. Crookhaven is connected with the mainland by a narrow sandy ridge at the head of the harbour, and has the appearance of an island. Some copper lodes have been discovered of a promising character, from one of which a considerable quantity of ore stuff has been raised. The ore is of the purple and grey kind, and yields a high per centage of copper—we are also informed that some specimens yielded several ounces of silver to the ton; it is, however, diffused throughout the matrix or veinstone, but, being of a softish nature, may be easily pulverised by a crusher, which, in connection with a steam-pumping engine, is being erected. The mine is in active operation, with, we understand, a private party of gentlemen in London and Brighton; carpenters and smiths' shops, yards, offices, &c., have been erected, and the engine house will soon be completed. The lode now working underlies north, and we are informed the engine-shaft, sunk from surface some 20 fms., will be further sunk perpendicular to a depth of 60 fms., before intersecting the lode. The extent of the sett on the run of the lodes is upwards of a mile in length, and about one-third of a mile in breadth. The mine is very well situated for shipping its produce and landing materials, &c., vessels of any tonnage can load and unload close to it, and thereby effect a saving of all land carriage. The engine, crusher, pitwork, &c., are on the mine, ready to be fixed as soon as the house is finished.

About two miles west of Crookhaven Mine is the “Brow Head”—a bold and lofty promontory, in which, in the face of the cliff, are to be seen some large lodes containing copper ore. We are informed that it is intended shortly to work them; but the lodes and minerals belong to a different party. About five miles west from Crookhaven we arrive at the “Mizen Head Mine,” the property of J. H. Swanton, Esq., and other parties, of Skibbereen. The mineral royalties of this property were recently purchased under the Incumbered Estates' Court. In the Mizen Head cliffs are several large lodes of spar, gossan, and yellow copper ores. One of these was opened many years since at the base of the cliff by the late Col. Hall, and several tons of ore raised. A deep adit level has been driven on the course of the lode 80 fms., and winzes sunk from the adit to the 10 and 20 fm. levels; the lode in the 20 fm. level may be said to be, on an average, about 5 ft. wide. Hall's shaft has been sunk 20 fms.—14 fms. perpendicular, and the remaining 6 fms. on the course of the lode, which varies from 4 to 6 ft. in breadth, containing gossan, spar, and a good bunch of yellow ore. There are other parallel lodes in the Mizen Head cliffs, containing copper ore, spar, &c., which have up to the present time been untried, presenting similar advantages for working and driving adits. About two miles north, and parallel, we come to the “Baileen Mine,” which is being worked by an influential company in Bristol. The cliffs are bold and perpendicular, and great results are expected from the driving of a cross-cut to intersect a parallel lode. Offices, smithy, &c., have been erected. Following on our course round the rugged headlands of the Mizen, Three Castles, &c., we reach the south shore of Dunmanus Bay, on which, and about a mile to the east of Baileen, the “Dhurome Mine.” This mine was opened some years ago by the late Dr. Traill, offices erected, and also smiths' and carpenters' shops, dressing houses and dressing-rooms, neatly and conveniently laid out. Two or three small cargoes of copper ore during the working were raised, principally from a north and south lode, and sold in Swansay. There are a few men at work; but we do not expect to see much done while the mine remains in the hands of the present parties, as it is not being worked with spirit. Having travelled over the numerous headlands, and viewed the works of Nature in some of her wildest forms, we return for a moment to take a retrospective glance at the mining districts of this locality generally. The Audley Mines we call the eastern boundary, and from which in a line to the west are included Coosheen, Crookhaven, and the Mizen Head—making a distance of 16 miles. Parallel with this range, we find Baileen, Dhurome, and Ballydehob to the north. We find on the south shore of Bantry Bay, in another parallel range, the mines of Glenauin, Carrigwill, and Killeen; while to the north of Bantry Bay, in another parallel range, are the mines of Berehaven and Keumare; and, looking from west to east, we have on the south the Mizen Head; north, the Three Castle Head; then Sheephead; and, still further north, the Dursay Head—all jetting out into the Atlantic, and forming deep and safe harbours from 30 to 40 miles in length.

During our recent visit to the mining districts of Cork and Kerry, some curious facts relative to a mining transaction came under our notice, and which we intend briefly advertizing, by way of showing how these matters are managed in the Sister Isle. The case, we have reason to know, is simply this. A, B, and C, are partners in a mine, each holding a similar interest. A and B do not feel disposed to go on

C, as a partner, but not as agent, buys the interest of A and B—say, for 100*l.*, and sells it to D for the same sum. D resells it to E and F at a profit of 20*l.*, which, as a matter of course, we consider has no reference whatever to either A, B, or C; but, notwithstanding a *bona fide* sale having taken place from A and B to C, E turns round and brings an action against C for one-third of the profit realised by D; and, strange to say, an Irish jury gives a verdict in favour of D.

This certainly is *lex aequa lex*. As to the justice of the case, we leave our readers to form their own opinions; but, in our experience, we never before heard of such a decision—indeed, contrary to evidence and common sense. We must, however, proceed a little further in this matter, and in so doing we shall be able clearly to show that there was something very like a conspiracy between E and C to injure C; for we are informed that when F had discovered that his new “friend,” E, was a bankrupt tailor, he very naturally wished to cut the connection, and he consequently paid him a sum of money to get rid of him; but when E delivered up all papers and documents to F, it was discovered that in the transfer by A and B, of their interest to C, the word “sold” was cut out, and also other important words, thus rendering the transfer of no use. This *clipping* act of the tailor was, no doubt, communicated by him to his friend B, who thereupon, and in the face of his own letter, acknowledging the receipt, on behalf of himself and his friend, A, of the money for their interest in the mine, and in which he stated that he knew no partner or party in the transaction but C, and says to C in the same letter, “you made us an offer and we accepted it,” as we have before stated, brought an action against C to recover one-third of the money realised by D as his commission.

It is, we think, needless to comment on what we cannot designate by a milder term than a *wile* scheme between a “Cork broker” and a “London quaker” to injure the reputation of an honest man—a man, by the way, who has done, and is still doing, more good for the mining interests of the south of Ireland than any other person who has come into it. We shall have our eye upon the *per alium* to

## PROVINCIAL BANK OF IRELAND.

The annual meeting of shareholders was held at the offices, in Old Broad-street, on Thursday, May 20.—ELLIOT MAGNAUTON, Esq., in the chair.

The CHAIRMAN said this was the twenty-seventh annual meeting, convened under the Deed of Settlement, for the purpose of electing four directors in the room of those going out by rotation, who

## THE MINING JOURNAL.

## ROCKY BAR MINING COMPANY.

The following advices have been received *per diem*, from Mr. Noble, the company's agent, dated Grass Valley, Nevada County, California, March 30, 1852, addressed to the Hon. Lovell S. Mickles, the company's agent in London:

You are aware of the obstacles met with by the superintendent (Mr. Delavan) in getting the machinery into operation, which was not done until about the 20th Jan. Since then numerous alterations have become necessary, as experience teaches; but at present the mill is in fair working order. The most serious drawback at this time is an inefficient boiler to the steam-engine. The latter is one of the best in the valley, of about 35-horse power, while the boiler is only sufficient for a 10-horse power engine, being simply a common cylinder boiler, but at the time of putting up the mill it was the only one to be obtained at San Francisco, except one for a more powerful engine, and at an enormous price. The consequences of this inefficient boiler at this time are that sufficient steam cannot be generated to drive the Chillicothe mill and battery of stampers at one and the same time. Measures have been taken to remedy this defect, by procuring a double fire boiler. The mill and its operation attracts much attention here, and is considered far superior to anything yet erected. Gentlemen interested in other mills have been to view it, and honourably concedes its efficiency by taking drafts and minutes of its machinery. With the crippled condition of the present operation of the mill, it now turns out, upon average, \$1000 per day, while the expenses may be estimated at \$1000 per day or less. This is on an estimate of actual running time. One cause of obstruction was a second edition of the rainy season. From the 28th Feb. to the 16th March there prevailed a continual storm, which suspended the operations of the quartz mills in the valley. As a criterion of the purity of the gold produced from the "claims" of the company, I annex a copy from a certificate of Moffat and Co., San Francisco, being the result of an assay of a small amount forwarded by the superintendent (Mr. Delavan) to Page, Bacon, and Co., bankers, who will, probably, act as financial agents of the company. The second table shows the actual results up to this time.

No. 180.—Messrs. Page, Bacon, and Co.: Memorandum of gold bullion deposited with Moffat and Co., San Francisco, March 5, 1852—

Weight before melting	Dwts.	1265	Fineness	864.100 lbs
Loss in melting	17		Value	\$1114.48
Nett	1248		Commission, 2 per cent.	30.64

Nett proceeds ..... \$1088.84

Abstract from the books of the Rocky Bar Mining Company, showing the amount of gold produced from the mill since commencement of operations to March 29, 1852:

Feb. 6, gold from the mill	\$859 30	March 1, gold from the mill	\$158 0
9, gold specimens sold	700 0	10, "	866 0
11, gold from the mill	519 0	12, "	327 0
12, "	330 0	13, "	70 0
13, "	65 0	14, "	98 0
15, "	269 80	16, "	495 0
17, "	323 60	18, "	311 0
Total	\$5012.70		

From the above advices, it will be seen that, as might be expected in the beginning of operations in a new country, great interruptions from various causes have occurred; but the fact of a profitable yield has been established, and it only requires additional boiler power, as well as to work the machinery to its full advantage and power, to realize important results.

As some degree of mistrust has been created by the reports as to titles in California, it may be well to state that the title of this company has never been a question of doubt or dispute; and being held under Squatters' law, which all the miners have a direct interest in supporting, not only do they hold peaceful and quiet possession, but would be protected therein by their neighbours, if any law less attempts were at any time made to disturb them.

## NEWS FROM THE DIGGINGS.

Sir,—I herewith send you a few extracts, taken word by word, from a letter just received from a brother, settled at the Mount Alexander diggings, in the Victoria district of Australia. If you agree with me in thinking they may be interesting to some of your numerous readers, and will kindly give them a corner in your most extensively distributed paper, you will greatly oblige—

G. N. COLLYNS.

Mount Alexander Diggings, Jan. 18.—The gold here is generally found in clay, clayey gravel, and in interstices of slate, &c., at depths varying from the surface to 55 feet. It is more generally diffused on this ground than it ever was known in any other part of the world, hence persevering and steady parties are sure to do well. It is found in patches, or "pockets," as it is termed, and sometimes a party of, say, three or four will obtain over 50 lbs. weight in a day. Having a splendid pair of scales, I am in the constant practice of weighing and subdividing gold for parties, and have had as much as 20 or 30 lbs. brought by one party at a time. About a fortnight since I was purchasing gold at 21. 17s. the ounce; now the price is down, from the quantity thrown into the market, and I can get it at 10s. per oz.—I have bought as low as 45s. Provisions, &c., are at a high rate here—four, 5d. per lb., ham and butter, 2s. 6d. per lb., oats, 18s. per bushel; slop boots, 2s. per pair; common pitchfork and shovel, 1s. each. These rates are under those of several stores in the district. The cattle-owners now want men to look after their sheep; the price of labour is most enormous, a man is worth 12s. per day. The gold discovery is ruining the neighbouring colonies, Adelaide, Van Diemen's Land, &c., which are fast becoming depopulated. At night the sight of the thousand fires around us is very pretty, and the incessant firing of guns and pistols rather astounding. Almost every man is armed, and I can assure you the state of the society requires it, for crime in almost every shape and form is being perpetrated almost daily. You may suppose a gold field a most original sight: at a distance it can only be compared to an immense army, encamped in myriads of tents of all shapes, sizes, and colours. From where I write are the main diggings in the country, they extend for about ten miles, and about three weeks since contained from 12,000 to 15,000 persons; besides there are many other places close at hand, and gold is still being found at several new places throughout the colony. To give you an idea of the business I am carrying on, I may tell you that I sent down 26 lbs. weight of gold, and about 200/- in cheques, per last escort, the proceeds of one week.

AUSTRALIA.—Advices have been received, *via* Madras, from Hobart Town to the 20th Feb., and from Sydney to the 4th, and Port Philip (Mount Alexander) the 7th. At Sydney the Rev. Mr. Clarke had returned from a "prospecting" tour on behalf of the Government, and had communicated the discovery of the existence of gold in granites of a peculiar character in the counties of St. Vincent, Argyle, Murry, Dampier, Wallace, Wellesley, and beyond the boundary on this side of Victoria, as well as in the basins of Shoalhaven, Murrumbidgee, the Hume and the Snowy rivers. Northward, gold had been found in the neighbourhood of Tamworth, near the River Peel. These discoveries were, however, not valued. At Braidwood, the progress of mining operations was favourable, 1500 licenses having been taken out in the course of one month. At Merco, also, there was great activity among the mining population—labouring men could not be secured under 3/- per week and rations. Instances of extraordinary success have been recorded: one individual obtained as much as 22 ozs. in one day, while another had secured 86 ozs. in nine days. The gold received by escort and remittance in the previous week was 6128 ozs., valued at about 20,000. The price had slightly advanced, and was quoted from 68s. 6d. to 64s. 6d. In the vicinity of Lake Omeo, near the Snowy Mountain range, a workable gold-field had been entered upon, which, as far as could be ascertained, promised very favourable results.

Adelaide is represented as presenting a most melancholy picture, or rather, realising the idea of the "Deserted Village." Its merchants and landholders, stockholders and tradesmen, were ruined, or had quitted for Port Philip to avoid ruin, and Burra Burra shares were unsaleable at 60/-, although a few months ago they were not procurable at 200/-.

At Perth (Western Australia), coal has been discovered, near Kelscott. The discovery took place by accident: a slate quarry was being worked, and the men happening to pass through the slate stratum came upon the coal immediately beneath, and penetrated, it is stated, about 6 ft. into the seam. The coal as yet obtained was not of particularly good quality, but it was found to burn pretty well, and was expected to improve as a greater depth is attained. Should the discovery prove as is anticipated, it must be regarded as the happiest accident yet known in the history of the colony.

CALIFORNIA.—Advices from San Francisco (April 24) represent the mining prospects to be much improved, as the gradual melting of the snow will continue to supply the "placers" with water for months. By all accounts, the supply of gold was never so great as it is at present. Nearly all this vast amount is produced by the diggers, for although there are a great many mills scattered over the gold region, none of them pay, and they add really little to the supply of gold. Their failure is owing to the want of mining skill, and to the imperfect nature of the machinery for grinding and amalgamating. Farming is steadily on the increase. About 50,000 acres are sown with barley this season: this is an article of great consumption as horse-feed, and it has hitherto paid enormously. Trade was never in more healthy state, and there is a prospect of the improvement continuing. The trade in provisions is particularly brisk: the recent inundations having cut off communication with the interior, and stopped the supplies for some time, every article that was eatable has been consumed. There has been a small emigration to Queen Charlotte's Island of adventurers after gold. This gold contains more silver than the California gold, but our information upon the whole subject of the discovery is imperfect. The gold exported in Jan., Feb., and March, was \$7,710,932; and the amount shipped in the Golden Gate, and the estimated quantity taken by passengers, and we have an aggregate, from 1st January to 5th April, of nearly \$14,000,000. A lump of gold, valued at \$1200, and another massive piece weighing 26 lbs., have been found at San Andreas and Valecito. The value of a piece of gold picked up at Kelsey's dry diggings was estimated at \$4000. Numerous instances are given of the discovery of lumps of gold weighing from 1 lb. to 2 lbs. At Duggan's Flat, a party of 30 men were engaged in tunnelling through the solid rock: they had bored 100 feet, and expected to go 50 feet further before finding gold. In the San Francisco markets great activity continued to prevail. From New Mexico, we learn the party who went to Gilia for gold had returned unsuccessful.

HOLLOWAY'S OINTMENT AND PILLS WONDERFULLY EFFICACIOUS IN CURING SCROFULA, OLD WOUNDS, AND BAD LEGS.—Mr. L. Fordyce, shoemaker, Forgan, Aberdeenshire, suffered for a long time from a large wound in his thigh, from which die and portions of the bone came out. He was at the Aberdeen Infirmary for several weeks, but, in defiance of the treatment there adopted, he became so much worse that the surgeon advised him to have the limb amputated. On his objecting to this, he was discharged as incurable, when he commenced using Holloway's ointment and pills, which have so effectually cured him that he is able to resume his work, and now enjoys most excellent health. Sold by all druggists, and at Prof. Holloway's establishment, 244, Strand, London.

## Mining Correspondence.

## BRITISH MINES.

ALFRED CONSOLS.—The 100 fm. level is driven east of Field's engine-shaft 6 fms.; the lode here is about 1 foot wide, composed of soft spar and a small quantity of muriatic: we expect to drive 13 or 14 fms. more before we reach the ore vein below the 90 fm. level; and, from the present appearance of the ground in the end, in six or seven weeks from this time we expect to reach this point. We have commenced sinking No. 1 winze under the 90 fm. level, which is 26 fms. east of this shaft; the lode here is about 5 feet wide—4 feet of the south part is worth for copper ore 80/- per fm., this looks well for the 100 fm. level. The stopes over the 90 fm. level, east of this shaft, are just as they have been from the commencement—viz., 50/- per fm. Wyld's shaft is sunk 3 fms. under the 90 fm. level. There is no change to notice in either of the cross-cuts driving north or south of this shaft. The lode in the 80 fm. level, west of the engine-shaft, is from 4 to 6 feet wide, composed principally of capel. The lode in the 60 fathoms level, west of this shaft, is about 3 feet wide, for the most part spar. We expect in about a week from this time to be ready for sinking the boundary shaft under the 80.

ANNA MARIA CONSOLS.—I have visited this mine to-day, and find the men are progressing with the shaft; and, as we have beautiful soft ground and little water, I purpose putting 12 men, that we may get down as fast as possible. I have asked some of the leading founders for an estimate of a 24-inch cylinder, with 8 tons boiler. This will put us deep enough to prove the mine, and make a powerful whim and crusher afterwards, which, if we have a new one, we had better have it arranged for that purpose. Still I think we shall be able to purchase a second-hand one, and shall take the first opportunity of doing so to advantage.

APPLEDORE.—We have nearly finished the plat; the ground in which has been harder than we expected; consequently, we have not completed it so soon as we expected. We have broken some very fine stones of lead this week from a part of the lode which we have in cutting the plat; the stones are far superior to any that I have seen in this mine before.

BAT HOLES.—The Wood lode in the 60 fm. level, driving north, is 20 ft. wide, a mixture of spar and capel, with two well-defined walls, underlying west nearly 3 ft. in a fm. The lode in the 48 fm. level, driving north, is 2 ft. wide, composed of congenial spar, mixed with blende and lead ore; will yield of the latter about 9 cwt. per fm., and opening ground that will set at a moderate tribute. We sampled, on Friday last, April ores, which weighed 33 tons, 10 cwt., 3 qrs., and our tributaries are working with spirit, so that we may calculate on having an increase for May.

BEACON.—The Beacon shaft is now down 6 fms., and the lode looking very promising, producing tin. In Telliott's level the lode is 18 in. wide, composed of blue kilas, capel, and spar, mixed with tin; this lode is very kindly, and I think when we have driven a little further on it that we shall have a good lode. At the north shaft we have four branches of tin, which, on the average, are about 1 in. wide, and will produce about 12 cwt. of black tin to the 100 sacks; these branches grow with them, the said shaft is down 7 fms., and we have cut a very kindly lode, but through the quantity of water coming from it, we have been obliged to take the men from it for a short time. The water-wheel stamps are progressing as fast as possible, and I intend to get them to work on Monday next, when we shall commence returning the shaft now at surface; I suppose there are 2 tons of the rich tin-stuff at surface (I do not mean 2 tons of black tin), and about 30 tons of dust-stuff from Telliott's level, so that I hope when the stamps are started that we shall be able to keep them going. I am very much pleased with the prospects of the mine, and think that with a little patience and perseverance the Beacon will repay well for the outlay upon it.

BEDFORD UNITED.—The lode in the 115 fm. level east will yield about 64 tons of ore per fm. In the 103 east the lode is 3 ft. wide, worth upwards of 5 tons per fm. The lode in the 47 west is increased in size, being 3 ft. wide, producing stones of ore. The pitches continue to yield well. All other parts of the mine are without alteration.

BLACK CRAIG.—Nos. 1 and 2 cross-cuts, in the 40 fm. level west, are 12 fms. the same kind of stone as last reported. They have passed through a small branch of lead in No. 3 some days ago, but are still in a horse of ground. No. 4 cross-cut is without alteration. There is still a good mixture of lead in the east and west ends, driving from No. 1 cross-cut, and the ground favourable for ore. The stopes under the 20s are still looking well for lead. The sumptuous have finished dividing and casing down the shaft to the 25 fathoms level.

BOTTLE HILL.—The stopes are all just as when last reported. Our engine is working in first-rate style, and the water is forked fast. We are down 10 fms. below the deep adit. The lode in the 47 west is increased in size, being 3 ft. wide, producing stones of ore. The pitches continue to yield well. All other parts of the mine are without alteration.

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BLACK CRAIG.—Nos. 1 and 2 cross-cuts, in the 40 fm. level west, are 12 fms. the same kind of stone as last reported. They have passed through a small branch of lead in No. 3 some days ago, but are still in a horse of ground. No. 4 cross-cut is without alteration. There is still a good mixture of lead in the east and west ends, driving from No. 1 cross-cut, and the ground favourable for ore. The stopes under the 20s are still looking well for lead. The sumptuous have finished dividing and casing down the shaft to the 25 fathoms level.

CALLINGTON.—The 125 fathom level north, at the south mine, has intersected the slide, which is very hard and wet; this slide is 45 fathoms south of the countour shaft; the lode in the south end is 6 in. wide, saving work. The men in the 112 south are still cross-cutting west; we believe the main part of the lode is west of the present level. The lode in the 100 south is 1 ft. wide, opening moderate tribute ground. The stopes in the back of this level is not quite as good as when last reported, now yielding from 5 to 6 cwt. of ore per fm. The lode in Hallett's engine-shaft, sinking under the 30 fm. level, is 4 to 5 ft. wide, composed principally of clay-slate, mixed with jack and lead ore. The lode in the 30 fm. level north is 4 ft. wide, and very similar in appearance to the lode in the engine-shaft. The deep adit level, driving south on Joseph's lode, is 5 ft. wide, 2 ft. of which is saving work for dressing.

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CARON WOOD.—The shaftmen have sunk about 3 ft. this week, which makes the shaft about 26 fms. 4 ft. below the adit. The lode in the shaft is about 6 feet wide, but we are not yet through it; it is composed of spar, muriatic, and floskian, and water continues to issue from it.

CEFN GWYN.—The lode in the engine-shaft, sinking under the 10 fm. level, is 6 ft. wide, and rather improved since last reported, now yielding a ton of ore per fm.; this lode is gradually improving in depth. The lode in the 10 fm. level, driving east, is 5 ft. wide, 2 ft. of which is a mixture of ore, yielding from 8 to 10 cwt. per fm.

CHARLESTOWN UNITED.—The lode in the back, west of Blue Borrow shaft, is 9 ft. wide, producing work worth 3 cwt. of tin per 100 sacks, which is equal to 20/- per fathom. We have hoisted the new shaft for an incline plane, west of Buckler's, and are now laying the road for the wagon, which we hope to finish in about a week. The lode in the end west of the new shaft is much the same in quality and size as last reported; in the stopes, east of this shaft, the lode continues large, and is producing good work; the lode in the end, driving east from the cross cut at Fatwork, is about 2 ft. wide, composed of spar, muriatic, and floskian, and is producing work very fairly.

CARDON WOOD.—The shaftmen have sunk about 3 ft. this week, which makes the shaft about 26 fms. 4 ft. below the adit. The lode in the shaft is about 6 feet wide, but we are not yet through it; it is composed of spar, muriatic, and floskian, and water continues to issue from it.

CHYRASE CONSOLS.—We have, during the last fortnight, finished clearing up and securing with timber the 26 and 36 fm. levels east and west, and have set the responsive ends to be driven by four men each at 30s. and 35s. per fm. In clearing the end of the 36 east we discovered the lode to be upwards of 2 feet wide, thickly spotted with large rich stones of tin; this is very gratifying, as it is all good ground both above the 26 and below; this lode was produced under last working a large quantity of tin. The lode in the 26 east, is also looking very promising; we have just cut through the cross course in the 26 west, where the lode is low, but we shall, doubtless, speedily cut it. The furnace and burning house, together with the erection of the wheel and stampa, are all progressing satisfactorily. We have ordered an 18-fm. lift, which we expect to have on the mine in a fortnight; this will enable us, should nothing unforeseen occur, to proceed to fork the 46 and 56 in the course of the ensuing month.

COPPER BOTTOM.—The 40 fathom level is driven 9 feet west of May's shaft; but as the sumptuous have not yet taken down the lode, I am unable to say what it is composed. We shall drive the end west as fast as we possibly can. In the 30 fm. level, driving west of Gendall's shaft, the lode is 1 ft. wide, composed of quartz and spots of ore, and is of a more promising character than it has been for several fathoms. In the 20 fm. level, driving west of Gendall's shaft, the lode is of a promising character, but unproductive. In the 10 fm. level, driving west of the same shaft, the lode is at present unproductive. In the 20 fathom level, driving west of ladder-road shaft, the lode is composed of spar and muriatic, with spots of ore. We shall resume driving the ends east and west of

level, towards the western lode, is still in hard ground, and the progress consequently but slow. We are clearing through the heap of rubbish in the 24 fm. level north as fast as possible, and hope next month to set the backs thereof on tribute. We have not done anything in the 12 fm. level as yet.

**MERRILYN.**—The lode in the engine-shaft has a better appearance than for some time past, producing some good lead. In the 36 fm. level east, lode 6 ft. wide, producing upwards of 1 ton of ore per fm.; in the same level west, lode about 1 ft. wide, with some good stones of lead. The lode in the 28 fm. level is small and unproductive. The stones in the back of the 15 level are worth 35/- per ton. The stones in the back of the 16 fm. level, west of engine-shaft, are worth 50/- The stones in the back of the 26 fm. level, east of engine-shaft, are worth 45/- per fm.

**NORTH BASSET.**—The lode in the 82 fm. level, west of the new shaft, is 3 ft. wide, with a branch of ore on the north part 1 ft. wide. In the 72 fm. level west the lode is 2 feet wide. The lode in the 62 fathoms level, west of Lyle's shaft, is 2 feet wide. The lode in the 52 fm. level, east of Miner's shaft, is 3 ft. wide. In the 62 fathoms level, east of Miner's shaft, the lode is 1 ft. wide, producing stones of ore.

**NORTH DOWNS.**—In the 90, east of west shaft, the lode is 4 ft. wide, with stones of ore. In the 80 east the lode is 18 in. wide, with small traces of ore. In the 70, east of John Michael's shaft, the lode is small, containing no ore. In the 60, east of ditto, the lode is 18 in. wide, worth 7/- per fm.

**NORTH WHEAL ROBERT.**—We have cut through the lode in the 30 fm. level, north of Murchison's shaft, which is about 4 feet wide, underlaying 20 inches in a fathom, carrying on the north side a branch 8 in. wide of nearly solid ore; the north part of the lode, for nearly 2 feet wide, is composed of flookan, sugary spar, white iron, and mudiic, with a beautiful light soft killis; the south part of the lode is of a darker colour, with droppings of ore, and in some places good stones of ore—altogether, a strong kindly lode; I shall be better able to judge what quantity of ore it will produce per fm. by the latter end of this week, as we only cut through the lode this morning (the 18th instant). I send you by this day's mail a box of ore as a specimen. I have set to-day to drive east on the course of the lode—stated 5 fms., at 3/- per fm.

**NORTH WHEAL TRELAUNTY (QUITHICKO).**—From our inspection of the 20th inst., we find Coryton's shaft is sunk on the course of the lode about 24 fms. from the surface. The lode in the bottom of the shaft is full 2 feet wide, from which we broke stones of silver-lead ore and gossan mixed, weighing from 5 to 50 lbs. of such a character as is not exceeded in this neighbourhood, and which, no doubt, will lead to very profitable results to the shareholders, as the sett is very extensive on the course of the lode, and the strata very congenial for lead.

**PEMBROKE AND EAST CRINNIS.**—We have completed the plunger-lift to the 83 fm. level in Carlyon's shaft, and hope to have the water in fork again to that level in two or three days, when we shall immediately drop a lift 10 fathoms under and get on working. We find the engine is working much better since this lift has been fixed. We have the steam whim and grinder at work, and going on very well. At Truscott's, we are now preparing the plunger-lift to go down to the 40 fathom level, and shall in the course of this week commence dropping. I am happy to say the lode in the end in the 40 fathom level, north of Truscott's, is very much improved, now producing some beautiful stones of ore. In the winze sinking under the 18 fm. level, the lode is 4 ft. wide, the lode has a beautiful appearance; I think we must soon meet with a good lode here. The lode in the 30 fm. level, north of Clark's shaft, is also looking better; and I hope soon to have a good course of ore; it will now produce upwards of a ton of ore per fm. Our tributes are getting on very well. We are raising more ore than could be expected from so shallow a level.

**PERRAN WHEAL JANE CONSOLS.**—The lode in the shaft is still large and of great promise; but we do not expect any riches till we reach the blue strata. We have three men driving the adit on the course of the lode; this end is producing some good saving work. The general prospects, therefore, warrant vigorous operations.

**POLGEAR AND LANCARROW.**—The engine-shaft has been sunk 6 ft.; the lode is 1 foot wide, ground favourable for sinking. On Wheal Moyle lode, the old workings, which we found more extensive than we expected, have been cleared up. The lode has been worked from surface about 14 fms.; it averages about 4 ft. in width, underlying south about 2 ft. in a fm.; producing by assay 24 cwt. tons of tin per 100 sacks. Next week we shall stamp some of the stuff.

**PORELLIS UNITED.**—Since our last report we have driven on the north lode in the 94 fm. level 9 ft. east and 9 ft. west; it is now 3 ft. wide in both the ends, and worth 7s. per bushel throughout; we still find the lode to contain mudiic, with occasional spots of rich black copper ore; we shall be enabled, after laying our ground open (so as to get the backs taken away) to raise sufficient tin from this lode to pay all working expenses of the mine, and leave a handsome balance in hand. In the bottom of the winze on this lode, in the 19 fm. level, it is 18 in. wide, worth 7s. per bushel. In our north cross-cut, 9 ft. north of the north lode, we have cut a lode, and got into it 18 inches, without yet having the north wall, 1 ft. of it is worth 13s. per bushel; we believe the principal part of this lode is still north. In our south cross-cut, in the 24 fm. level, we have not yet cut the Horseshoe lode, but are daily expecting to do so. We have met with no alteration during the week in our operations in the 12 fm. level.

**PRINCE ALBERT CONSOLS.**—In the cross-cut the ground continues favourable for driving, and in a few days we expect to cut the two lodes. The new lode in east end is a very fine champion lode, and highly productive for tin. Our six sumptuaries are stopping the eastern back, on Prince Albert lode, at 30s. per fathom; the lode is quite as rich as heretofore, and good piles of tinstuff are daily being drawn to grass. We have suspended sinking the stump till the steam-engine goes to work. There is a certain cross-course about 7 fms. west of our west end, and as we near it the lode improves, so that we have a better lode there than we had before, during the last 10 fms. driving; and, upon the whole, our prospects were never better than at present. During the week we have had some heavy showers, which impeded our surface work a little. The engine house will, however, be finished about the end of the month, as at first anticipated. The boiler (9 tons) is brought on the mine, and the next week the bob, cylinder, &c., are expected.

**SOUTH TAMAR.**—The ends, pitches, and stokes are looking generally better. In cross-cutting north in the 100 we have reached the main part of the lode, but are not through it; so far its character is highly promising, the fluor-spar is of that description that has seldom failed to make ore. We have discovered a good deal of ground standing about Smith's shaft that will pay well. Our ore dressing is proceeding very well, and we shall sample again this day week quite as much, or more, than last time.

**SOUTH WHEAL ROSSELL.**—We have continued to sink Rundale's shaft; the present bottom appears to be quite through the lode, having intersected a short wall, which we are now about sinking into; the ground is, and has been, very favourable for sinking, as we have sunk upwards of 5 fathoms since we first discovered the lode. We intend to sink the shaft perpendicularly for some fathoms deeper, and then cut into the lode, which we expect to be productive, judging from the part we have already sunk through. We have not met with any lode in the adit level, driving north on the cross-course, since my last. We have not yet discovered the Wheal Arthur lode in shodding; the soil being deep makes it difficult to explore. The new wheel pit is completed, and we are getting on with the necessary work for fixing the wheel as fast as possible.

**SOUTH WHEAL TRELAUNTY.**—The engine-shaft is sinking below the 60 fm. level by eight men ground as before reported. In the cross-cut west on the slide, in the 60, we have intersected some small branches, indicating the lode to be further ahead—driving at 8/- per fm.

**ST. AUSTELL CONSOLS.**—The mine is looking exceedingly well; I can almost say we have a course of copper ore. In the No. 2 end east we have cut through the lode about 9 ft., and, from all appearances, there is 9 ft. more to cut through before we get to the north side. We are cutting through the lode from the south side. The eastern side of the cross-cut, or otherwise the end going east, is looking well, about 4 or 4½ ft. of the lode is saving work, and every foot I am expecting a course of ore. The back in the old workings is considerably improved; we have the branch nearly 3 ft. wide, almost as good as the stones I sent you. I put the men yesterday (May 16) to take down some of the branch, and I had one stone brought up to the counting-house at least 55 lbs. weight, rich for copper; I think we shall soon induce parties to speculate, by cutting a bunch of ore. Our No. 3 end east is improved, and we are not far from the shoot of the last party worked on over our heads. The ground in the cross-cut north is much better, and there is a large stream of water issuing from the end, which fully convinces me we are getting near the cross-course. I should very much like to put two men to drive south on the cross-course, to cut the great gossan lode. At present they are making towards the cross-course, and I do believe we shall have ore in the copper lode at the intersection of the cross-course with this lode; the ground is good. A little expense and a short time would prove this important question.

**TAMAR SILVER-LEAD.**—In the 215 fm. level the lode is 1 ft. wide, composed of capel and mudiic, with a small quantity of ore. In the 205 fm. level the lode is 18 in. wide, saving work, but of a coarse quality. In the 190 fm. level, the lode is 6 in. wide, occasionally producing good stones of ore. The 175 end is suspended until we can fix a railroad for bringing away the work accumulated, by driving the level north of Spurgin's shaft. The 160 end is still in slide ground, but we expect the lode is not far distant, there is a large quantity of slide ground from the end. At the north mine, we have fixed a plunger-lift in the 90 fm. level, and re-commenced sinking the engine-shaft below this level. In the 90 end the lode is 2 ft. wide, 1 ft. of which is good saving work. In the 80 end the lode is 3 ft. wide, composed of capel and can, with good stones of ore. Our last parcel of ore, computed 70 tons, was sold to the Tamar Smelting Company, at 19/- 5s. 6d. per ton.

**TINCROFT.**—At North Tincroft, the engine-shaft, sinking below the 120 fm. level, the lode is 8 ft. wide, worth 26/- per fm. for copper; in the 120 end, driving east of said shaft, the lode is 4 ft. wide, worth 19/- per fm. for copper; in the west end of the same level, the lode is 3 ft. wide, worth 22/- per fm. for copper. In the 110 fathom level, driving west of said shaft, the lode is 3 ft. wide, worth 24/- per fm. for copper; in the winze sinking below this level, west of said shaft, the lode is 2 ft. wide, worth 21/- per fm. for copper. In the 100, east of Willoughby's shaft, the lode is 2 ft. wide, worth 21/- per fm. for copper; and in the winze sinking below this level, east of new engine-shaft, the lode is 2 ft. wide, worth 21/- per fm. for copper; in the west end, in the same level, the lode is 4 ft. wide, worth 18/- per fm. for copper; in the winze sinking below this level, west of said shaft, the lode is 5 ft. wide, worth 18/- per fm. for copper. In the 152 fm. level, east of said shaft, the lode is 2 ft. wide, worth 10/- per fm. In the 152 fm. level, east of said shaft, the lode is 4 ft. wide, worth 10/- per fm. The stokes in the back of the 142 fm. level, east of Martin's east shaft, are worth 18/- per fm. The stokes in the back of the 139 fm. level, east of said shaft, are worth 16/- per fm. for tin. Chappell's lode in the 142 fm. level, west of engine shaft, is 24 ft. wide, worth 22/- per fm. for tin. In the 130 fm. level, driving west of downward shaft, the lode is 4 ft. wide, worth 12/- per fm. for tin and copper. In the 110 fm. level, driving west of said shaft, the lode is 3 ft. wide, worth 10/- per fm. for copper. Dunkin's lode, in the 100 fm. level, driving west of engine shaft, is 4 ft. wide, worth 10/- per fm. for copper. In the 90 fm. level, driving west of said shaft, the lode is 2 ft. wide, worth 12/- per fm. for copper. At Stansby's lode in the rise in the back of the 84 fm. level, west of said shaft, is 2 ft. wide, worth 8/- per fm. for copper.

**TRELAUNTY.**—At Trellawny shaft, the cross-cut in the 120 fathom level is driven 4 fms. towards the lode, and we calculate to intersect it about 3 fms. more. In the 107 fm. level, north end, the lode is 3 ft. wide, and worth 10/- per fm.; south end, 4 ft. wide, and worth 6/- per fm. In the 92 fm. level, north end, the lode is 3 ft. wide, poor at present, but there appears to be a change taking place in the ground, and we expect an improvement; south end, the lode is 2 ft. wide, and worth 12/- per fm.; east end, 2 ft. wide, and worth 10/- per fm. At the north mine, we have commenced clearing up the shaft under the 68 fm. level, and 8 men and 4 boys to wages will be forcing it down with all speed. In the 68 fm. level, north end, the lode is 2 ft. wide, and worth 6/- per fm.; south end, 1 ft. wide, and worth 9/- per fm. The 55 end is without change. On the whole, there is not much change in the stokes and pitches. We sold, on the 17th inst., a parcel of ore, computed 78 tons, to J. H. Meredith, at 19/- 1s. 6d. per ton.

**TRELEIGH CONSOLS.**—Christose Lode: In the 100, west of Garden's, no change in the cross-cut driving south. In the stokes above the 98, west of Woolcock's mine, the lode is worth 12/- per fm. In the 100, east of Christose shaft, the lode is 2 feet wide, containing stones of ore. In the stokes below the 90, west of Arthur's winze, the

lode is worth from 25/- to 30/- per fm., and improving. Middle Lode: In the 64, west of cross-cut, the lode is 18 in. wide, containing stones of ore; ditto east, lode 2 ft. wide, principally mudiic, with spots of ore. Parent Lode: In the 64 east of cross-course, the lode is small and poor. In the 30, east of Parent engine-shaft, the lode is 2 ft. wide, with spots of ore. Our tribute pitches are looking well.

**UNION (TIN).**—The shaftmen are getting on as fast as they can in sinking. Preparations are being made for a saving pit, and everything will be carried out with all possible speed; the price for the shaft is 30s. per fm., as far as can be sunk with a tackle.

**UNITY CONSOLS.**—At Gray's engine-shaft, the lode in the 70 fm. level is greatly improved since my last report. It still holds out 6 ft. wide, and is worth 30/- per fm. for tin. In the 70 fm. level west the lode in the end is 12 feet wide, producing saving work for tin. The stokes in the bottom of the 50 fm. level east and west have a lode 8 ft. wide, producing good work for tin, with copper ore, worth 6/- per fm. In the rise in the back of the 50 fm. level east the lode is 12 feet wide, producing saving work for tin. The rise in the back of the 40 fathom level, east of Buckley's, is held to the eastern whim shaft (Unity); this will enable us to draw our tinstuff from the 40, &c., through this shaft, an object much to be desired in this part of our operations; in the same level, east of eastern whim shaft, the lode is 3 ft. wide, worth 5/- per fathom for tin. In the 30 fm. level, east of the 18 fm. level, west of Gray's, the lode in the end is 3 ft. wide, worth 3/- per fm. for tin. At Lambro, in the 40 fathom level cross-cut, south from Kenworthy's engine-shaft, the ground is not so good for driving as reported last week, but the men are progressing with all speed towards Hampton's lode. At Wheal Kitty, the engine-shaft is now down 9 fms. below the 50, and I hope by next week we shall be down to the 60 fm. level, when the men will be put to drive north at this level to cut the lode, which I calculate is about 4 fms. distant. In the 50 fm. level east the lode in the end is 6 in. wide, producing some good copper ore; in the same level west the lode is 8 in. wide, worth 3/- per fathom for copper ore. The tribute pitches at the Unity side, on tin, are all looking well, but at the Lambro and Wheal Kitty side the pitches on copper ore are not looking so well as last reported. Our steam stamps is in full work, and the tin is yielding very satisfactorily.

**WEST BASSET.**—In the 42 fathom level east, the lode is 8 ft. wide, worth 10/- per ton of copper ore per fm. The 30 fm. level is about 10 fms. behind the 42; in this end we have a very kindly lode, 2 ft. wide, producing good ore. In the 20 fm. level east the lode is 4 ft. wide. In the winze sinking below the 42 fm. level, the lode is 3 ft. wide, worth 2 tons per fm. The end in the 42, and the winze sinking below that level, are very much improved since the above. All other places are progressing favourably.

**WEST GOGINAN.**—The lode in the engine-shaft, sinking under the 30 fm. level, is 7 ft. wide, composed of clay-stone, mixed with jack, mudiic, and several small branches of lead ore. The 30 fm. level, driving east from this shaft, has passed through the junction of the two lodes, where it is from 6 to 7 ft. wide, with several small branches of lead ore. Our intention is to drive this end 2 or 3 fms. further on the course of the lode, and if then no improvement, to suspend it, in consequence of the descent of the hill, which would make the back thinner as we proceed east, and leave the driving on this lode until we get 15 fathoms deeper in the engine-shaft. The 30 fm. cross-cut, driving south, is extended 18 fms. from the engine-shaft, and still in clean killis, and ground favourable for driving. The new shaft, sinking from surface on the south lode, is down 4 fms., and the lode is from 6 to 7 ft. wide, with an underlay south of about 1 ft. per fm., composed principally of gossan, mixed with jack, mudiic, and spotted with lead. I think that a lode of a more promising appearance at that depth cannot be seen in Cardiganshire.

**WEST WHEAL ROBINS.**—We are still engaged in bringing up the adit, but have a very troublesome job; I set it to be completed last Thursday (the 13th inst.), for 25/-, and when this is finished we shall be able to sink the shaft very fast, as the ground is easy, and the water will then, I hope be little. **WEST WHEAL ROSE.**—I am calculating to cut the lode very soon, but as there is no criterion by which I can accurately determine its underlie; it may take 1 fm. or more driving yet. The country is just as it was in the present end.

**WEST WHEAL RUSSELL.**—In the engine-shaft the lode has a very promising appearance, being 3 ft. wide, composed of spar, peach, and copper ore, worth 1 ton of ore per fm. We are making good progress in sinking this shaft below the 60. In the rise above the 60, no lode has been taken down since last week; the ground is still favourable for rising. The lode in the rise over the 48 is about 2 ft. wide, producing stones of ore; the ground is hard, which makes it difficult to put up the rise. No lode has been taken down in the 60 and 37 fm. levels since my last. We have taken down the lode in Bayly's shaft, and I am glad to say it is looking very promising, being 8 ft. wide, producing rich stones of ore; the greater part of the lode is saving work; we have not intersected it in driving the adit level north on the cross-course, but we continue to meet bunches containing gossan, spar, mudiic, and portions of copper ore.

**WHEAL ARTHUR.**—The lode in the 20 fathom level is 3 feet wide, not producing much ore, but a very kindly lode. The lode in the rise above the 35 fathom level will produce 1/2 ton of ore per fm., worth 7/- per fm. The lode in the 35 fm. level west is 3 ft. wide, worth 14/- per fm. The lode in the winze in the bottom of the 35 fm. level east is 2 ft. wide, composed of stones of ore. The lode in the stope in the bottom of the 20 fm. level east is 2 ft. wide, worth 10/- per fm. In the 30 fm. level cross-cut north we have cut into the old workings, but cannot ascertain the size of the lode until we stop down a piece of ground in the bottom of the level, as our 50 fathom level is 4 ft. under the 50 fm. level cross-cut south.

**WHEAL BENNY.**—The last report from the agent of this mine states as follows:—The character of the lode cut on the east side of the cross-course not being known, I am requested to explore the lode on the west side of the cross-course. Mr. Murray, he has given orders to explore the lode on the west side of the cross-course. Mr. Murray's attention, however, is chiefly directed to the Marquis lode, which is found on the southern extremity of this sett, and joins Hington Down Consols to the south, where they are raising 60 tons of ore per month, of high produce. It may also be remarked that the Marquis lode is the productive one in the Bedford United Mine, from which all their dividends are paid.

**WHEAL CATHERINE.**—As reported last week, we have been driving on the east and west course; in doing which, we have intersected a branch about 6 in. wide, composed of mudiic and spots of lead. The cross-course in which we are driving contains good prills of lead.

**WHEAL CREBOR.**—The lode in the pitch below the adit, west of the cross-course, continues a good course of ore. The lode in the 12, already reported on, west of the cross-course, is a fine-looking lode, carrying a good leader of the same kind of ore as the course of ore to the east lately passed through; and the whole of the lode, which is 24 ft. wide, must be saved. It has a strong resemblance to the south lode; and it is my opinion that the lode on which we had the course of ore is to the north, which, I found to be the case, will be a very important feature, having two fine lodes going into new ground so near each other. I have put the men to drive north to prove that point; and I hope shortly to have the pleasure of informing you that our anticipations are realized. The north and middle lodes are nearly found together in the 24 in. in the early part of next, and a great change for the better may reasonably be expected—in fact, there is a great change already; and there are strings of ore in the end. The lode in the 34 is fast improving; in the adit we have taken the men for a few days to drive back on the south lode through the cross-course to see it to the east, as it has not been seen east from that point to Hundle's shaft, being 45 fathoms; and, when seen in the cross-course, it is a large lode.

**WHEAL DUNLOP.**—In the cross-cut at Gill's, we are intersecting several branches of rich ore dropping into the south lode, which I hope to see in a fortnight or three weeks from this time. Our prills are as last reported. We are dressing again for another sampling, to take place at the end of June.

**WHEAL EDWARD.**—Brumby's engine-shaft is now about 20 fms. from surface, ground



At Great Bryn, the lode in the adit end east is 5 ft. wide, saving work, containing a lode of tin 6 in. wide, worth 3 cwt. to the ton of stuff, and looking favourable: the elevation of the ground will afford a back 25 fms. high. The ground in the cross-cut south is favourable, and there are indications of being near a lode; they expect to intersect two within 10 fms. The new engine-shaft is down 5 fms., expecting to reach the adit about the middle of next month. The stamps are working three heads, which is all the water allows of, and until they have steam power the returns will be short. A parcel of tin will be sent to market the end of the month. They are raising fine stone for the engine-house.

At Wheal Zion, the steam-engine was set to work last Wednesday, and the flat-rods will be attached this week. Vivian's shaft is down 14 fms., sinking by nine men; and Lemon's will at once be sunk under the 25.

At Wheal Augusta (St. Just), the 24-in. cylinder steam-engine went to work on Saturday. They have a 16-head stamps axle ready to attach to it, and all seem desirous of giving the concern an effectual and speedy trial.

At East Tolgus, they have not yet intersected any lode in the cross-cuts, which are driving in favourable ground. The lode is poor in the adit-bast; the stopes in the back are yielding 1½ ton of copper ore per fathom.

At Nancekuke, the lode is cut in the 28 east from 12 to 15 in. wide—good stones of lead; north opening grey ground. The ends in the 10 are yielding each 5 cwt. of lead ore per fm. The 23 fm. level south, on new lode, about 7 cwt. per fm.

At Wheal Grenville, the lode in the engine-shaft is 4 feet wide, composed of gossan and soft spar, and favourable for sinking. In the 40 fm. level the lode is 3½ feet wide, and kindly, producing some good stones of grey ore.

At South Tolgus, the 66 east on the south lode, is yielding 1½ ton of copper ore per fathom. In the 66 west Youren's lode is much improved, being 15 inches wide—good stones of ore in the bottom. The 54 west is worth 1½ ton of ore per fm.; 42 west 1 ton; 32 west 1½ ton; and, altogether, the prospects are very cheering. The annual meeting will take place in London, early in the ensuing month.

At Trannack and Bosence, the appearance generally is improving, and they estimate having about 25 tons of good ore at grass.

At Wheal George looks well in the bottom level.

At the Clive Lead Mine, they have a splendid lode in the adit, yielding from 1½ to 2 tons of ore per fm., and a pile already at surface of nearly 250 tons, worth 11½ per ton. This sufficiently marks the value of the concern from the short time operations have been going on. By continuing on the run of this lode, they will shortly intersect another, a north and south one, upon which at surface there is a vast open cutting, showing it to be of champion size, and several pits sunk on the back in sundry places, from which all the lead they could get at has been taken away. This adit will come under considerably deeper, and great expectations are formed that the lode will be there found to exceed all others in produce and value.

At the Condurrow Mine, there is a very considerable improvement in the 90 fathom level, east of Hope shaft, where they have a coarse of black copper ore 2 ft. wide, worth 45½ to 50 per fm. The lode in the 70, on the recently discovered south branch, has also improved.

At Warleggan Consols, the new stamp-heads are fixed, preparatory to stamping the tin, of which they have a good branch in driving west of the rise. In the stopes and the 8 fm. level the lode is improving.

At Butterdon, the bottom end south is 4 ft. wide, 1 ft. of which is prian and lead ore—good saving work.

At Devon Burras Burra, the shaft in the Gate-post lode is now 2 fms. below the adit; the ore is found going down as firm and rich as ever, carrying abundance of green carbonate. Several tons of ore are already prepared for the grinder. In the shaft on the brake lode, now 10 fms. deep, a branch has been cut from 14 to 15 inches wide, composed of a beautiful white spar, peach, and prian, interspersed with rich yellow copper, almost saving work. The shaft will be down 15 fms. by the end of the month, when the north and south lodes will be cut, and from their appearance in the adit level great results are anticipated. The ground continues most easy and congenial.

At Devon Consols North, the engine-shaft is now sunk 5½ fathoms below the adit; the ground improves in going down, and is more easy for sinking, being composed of a softer killas. The men are working well.

At North Wheal Robert, the lode has been cut in the 30 fm. level, where it is found to be 4 ft. wide, with a branch about 8 in. wide on the north side, nearly solid copper, while the south side contains stones of good copper ore; and the whole composition of the lode is of the most favourable character; the shaft is down about 6 fms. under the 30 fm. level.

At East Wheal Russell, the shaft is now down 48 fms. In the 45 fm. level east the lode is composed of a splendid gossan; and on the south side of the end there is a sparry capel 3 ft. wide. A cross-cut in the 45 fm. level to intersect the northern lodes, which form a junction nearly opposite the shaft, has been commenced, and driven 6 ft.; the ground is favourable, and the length of the cross-cut is estimated at only 15 fms. Where cut in the Canal tunnel, there is fine copper ore in these lodes—a stone, ½ cwt., having recently been broken from one of them.

At Wheal Harriet, the south lode is 4 ft. wide in the sump winze below the 40, turning out 5 tons per fm. for the length of the winze (18 ft.). The rise in the back of the 40 east will turn out 5½ tons per fm. for 9 ft. in length. The 30, east of engine-shaft, on the north lode, is producing 1½ ton per fm., worth 50 per ton.

At East Kit Hill, Capt. Trathen reports "that they have driven this week 6 ft.; the lode still continuing good, and worth nearly 100 per fathom."

At Creetown the No. 1 lode, in No. 2 level, is 1 ft. wide, fine ore throughout. In the shaft it is 1½ ft. wide, good stones of lead and copper, mixed with gossan; eight men are sinking it with all dispatch. The backs of No. 3 level are yielding respectively 2 tons and 1 ton per fm. No. 4 lode is looking very kindly. The second assay of the gossan produced 40 ozs. 18 dwts. 11 grs. per ton. The application for shares was for 61,442, being upwards of six times the number they have to appropriate.

At Unity Consols, the lode in the 70, east of Gray's engine-shaft, is 6 ft. wide, worth 30½ per fm. for tin; west, it is 2½ ft. wide, saving work. Both stopes in the 60 bottom are producing good work for tin, and about 6½ per fm. for copper ore. The rise in the back of the 50 east, saving work for tin: the 40 east is worth 5½ per fm.; the 30 west, 3½ per fm. The tribute pitches are all looking well, and the steam stamps in full work.

At Cwmystwyth, the present returns are about 80 tons of ore per month, expecting an early increase, the mine having improved. The north part of the lode has been cut in Gill's lower level, and is turning out some very fine ore.

At Kingside, the lode looks well for 3 ft. high in the end.

At East Wheal Leisure, the engine-shaft is down in white killas 11 fathoms below the 38. By next week they hope to be driving a 50 cross-cut. The 27 west is turning out some good stones of ore, and much water.

At Merlin, the stopes are turning out well. The back of the 15 yard level is worth 35½ per fm.; back of the 16 west, 50½; back of the 26 east, 45½ per fm. The lode in the shaft is looking better. The 36 fathom level east is producing 1 ton of ore per fm.

During the week shares have changed hands in Devon Great Consols, South Tolgus, West Caradon, Alfred Consols, Tincroft, Merlin, West Providence, Mary Ann, Bedford, Lewis, Trewhane, Orsedd, Garreg, Tremayne, North Buller, Clijah, St. Aubyn and Grylls, Drake Walls, South Tamar, North Vale of Towey, Kenmare, Creetown, Clive, Cubert, West Ding Dong, Vale of Towey, East Daren, Great Bryn, Alt-y-Crib, Tamar Consols, Kilbricken, Trannack and Bosence, Trebarvah, Millpool, Wheal Arthur, Harriet, Fortune (in South Tawton), Treworliss and Trenthick, Cefn Bruno, Chyprase, East Gunnis Lake, East Tamar, Peter Tavy, Treylan, Prince Albert Consols, Pembroke and Crinnis, Great Wheal Alfred, Cook's Kitchen, Chiverton, Cwmduy Rock, Boringdon, East Boringdon, Crebor, East Russell, North Robert, West Wheal Rose, Union Tin, Condurrow, East Pool, East Bassett, Raleigh, Praed Consols, South Treseavane, Mining Company of Ireland, Wicklow Copper, &c.

In Foreign shares, there have been transactions in Cobre, General Mining, Royal Santiago, St. John del Rey, United Mexican.

The Linares Mining Company has received advices to the 8th May from Mr. Henry Thomas. Pig-lead weighed in, 564 tons; remaining in stock, 518 tons; and lead ore in stock, 239 tons. A sale of 466½ tons has been made in London, realising 7641.7s. 11d. The lode in the 65 is worth from 1½ to 2 tons of lead ore per fathom. The 55, west of Buena Ventura winze, is worth 2½ tons per fathom; east of Las Nieves, 1½ ton; the stopes, 2½ tons per fm.; the 45, west of San Juan, ½ ton. The tribute department is just as last reported.

The National Brazilian have advices to the 28th of March. The produce being Cocao, mks. 1 5 4 19; Cuiaba, mks. 1 4 6 39; making together, mks. 3 2 2 58. The crush has at length been perfectly secured and put right; they will now be able to get away much of the lode, which yielded well before the crush took place. The next advices are expected to be much more cheering.

The Imperial Brazilian advices are to the 27th of March. Bananal, lbs. 2 2 8; Gongo, lbs. 9 7 18—lbs. 11 10 6; showing a slight improvement. At Maria workings the rego has been completed; the formation has not yet been opened its full width. The 12 and 6-headed stamps at Santa Rita could be placed there at a small cost, and it is probable will be.

The Royal Santiago Company's advices are to the 16th and 21st April, and report a fine branch of solid ore, 1 foot wide, in Taylor's shaft, quite free from mandic; it is about 3 fms. below the 27, and altogether yielding 5 tons of ore per fm. This discovery is likely to be important.

The St. John del Rey advices are down to the 31st of March. The yield of gold for Feb. is 26,475 oits, at 7s. 8d.—10,148. 15s.—Less costs thereon, 5116. 4s. 7d.: leaving profit, 5032. 10s. 5d. The produce for 21 days in March, is 17,991 oits. A remittance of about 20,000. of gold arrived, per *Severn*. [The report will be found among the Foreign Mines.]

From Labuan, we learn the fire which had recently occurred in the coal mines had been got under, and operations fully resumed, 2000 tons being now ready for shipment. The railway from the pit to the wharf was laid down, and the supply of coal expected henceforth to show a large increase.

There has been no improvement in the general appearance of the gold mining share market this week—only the smallest amount of public favour being at present extended to these adventures, and prices remain flat. In the case of many of the Californian undertakings this scarcely excites surprise, but it is currently noticed as somewhat remarkable that the receipt of extremely favourable news relative to the yield of gold in Australia is usually followed by increased flatness in the market for the colonial gold mines. The directors of the Gold Importation Company have announced their intention of winding up, and returning the deposits, less 1s. per share, which will be retained "to defray the expenses consequent upon placing the undertaking properly before the public." An unfavourable feeling has been produced by this announcement, as the Sierra Nevada Company last week returned the deposits in full. Anglo-Californians were firmer this afternoon; advices have been received from the resident director, Sir Henry Vere Hunsley, and there is every probability that the machinery is now at work: in another column will be found a letter from Mr. Cotterell, the chairman of the company, explanatory of its present position. The latest quotations are—Aqua Fria, ½ to ½ premium; Anglo-Californian, ½ to ½ prem.; Australasian, ½ to 1 prem.; Australian Freehold, ½ to ½ dis.; Ave Maria, ½ to ½ dis.; British Australian Gold, ½ to ½ dis.; Carsons Creek, par to ½ prem.; Colonial Gold, par to ½ premium; Golden Mountain, ½ to ½ dis.; Lake Bathurst, ½ to ½ dis.; Nouveau Monde, ½ dis. to par; Port Phillip, par to ½ prem.; Quartz Rock, ½ to ½ dis.; West Mariposa, ½ to ½ dis.; Melbourne, ½ dis. to par; Australian Consols, ½ dis. to par; Yuba, par to ½ prem.; Royal Australian Mining and Refining, ½ dis. to ½ par; West Granada, ½ to 3½ prem.; Britannia, ½ to ½ premium; Liberty, 5½ to 7½ prem.; Baden Baden, 1½ to ½ prem.; English and Australian Copper ruled at ½ to ½ dis.

The Glenaulin Copper Mining (Ireland) shares were yesterday freely dealt in at the Stock Exchange—price ½ to ½ prem., for the coming out.

Shares in the Irish Channel Submarine were firm, at ½ to ½ prem.; Mr. Griffin, the company's engineer, has started for Scotland to superintend the execution of the contracts. Crystal Palace shares, at the closing, were from ½ to ½ prem.

The Port Philip and Colonial Gold Mining Company have received advices from Mr. Evan Hopkins, announcing his arrival at Singapore on 3d April, and intended departure in the following week for Port Philip, to forward the company's operations. A party of 28 miners, with their families, left Liverpool on the 4th inst., by the *Geelong*, for Port Philip; these men were engaged in Cumberland by the company, and are accompanied by an experienced mine agent. This is their third party dispatched from England.

The Nouveau Monde Company have advices from Mr. Clement, their superintendent, of 11th and 24th March; the agent of Col. Fremont had been unable to put him in possession of any of the lands in the Mariposa estates, they being occupied by other parties, whom he had no power to dispossess. Under these circumstances, Mr. Clement had determined to leave Mariposa, and either take up one of the reduction establishments at present working ineffectually (or want of proper knowledge of the operation of extracting the gold), or fix upon a station for the erection of new works: he says the people are well disposed, knowing that the object of the company is not to interfere with their placer diggings, but to mine for or purchase gold-bearing quartz, preference being given to the purchase; and "although there has been exaggeration with regard to the produce of gold, yet the average is likely to be such as would yield good profits on the working."

The Aqua Fria Company have received advices from Mr. Hepburn, their agent in California, who had seen Messrs. Palmer, Cook, and Co., relative to their lease in the Aqua Fria district, but they had heard no accounts from their partner, Mr. Wright, who was in London about the very date when the above despatch was written. Messrs. Palmer, Cook, and Co., however, acknowledge the right of their partner to make contracts in respect to mining leases, which would be binding on the firm, who have the management, and professed their readiness to abide by those which had been made to this company, and to proceed to carry them into effect immediately. The statement as to the position and value of the mine is correct; but a claim had been registered by persons originally in the employ of Mr. Jackson, who cannot, however, work for want of machinery, are willing to sell their interest, and Messrs. Palmer, Cook, and Co., are anxious to put the company in quiet possession. Mr. Hepburn, however, would not accept these terms until he had communicated with the directors, who are endeavouring to obtain and extension of ground and a modification of dues. Mr. Melville Attwood, the engineer, has left for California, and all the necessary machinery was shipped on board the schooner *Vixen*, which sailed on the 15th inst.

The English and Australian Copper Company have advices from Adelaide to the 10th January. The copper smelted in the week ending 27th December was 80 tons: the returns for the intervening period between the 29th Nov. and 27th Dec. have not been received. In the week ending 27th Dec. the ore delivered by the Burra Burra Mine to the smelting works was 228 tons; but it was considered the supply would fall off in consequence of many of the people employed at the Burra Burra Mine having left their work. Mr. Joseph Brown, who left England in February, well supplied for the purpose of carrying on the business of gold buying at Port Philip for account of this company, had arrived at Singapore on the 3d April, and would leave that place in a few days for Melbourne. It is feared the difficulties respecting labour referred to are but the forerunners of more extensive embarrassment to the company. The effect of the gold discoveries in the sister colonies upon the copper mining enterprise of Adelaide was anticipated many months ago, and its yield from this important source of supply will, doubtless, for a time be much curtailed. The intelligence is of great interest to proprietors of English copper mines, as the effect upon the market for that metal cannot fail to be very sensible.

The Rocky Bar Mining Company have advices addressed to the Honourable Lovel S. Mckles, the company's agent in London, dated Grass Valley, Nevada, March 20, 1852. The machinery had been erected, and was in operation, but a serious drawback had occurred in having an inefficient boiler, being only equal to 10 horses, while the engine is 30-horse power. Measures were being taken to obtain a double flue one. Great difficulties had also been experienced from a second edition of the rainy season, which had prevented the application of the full power of the engine. Notwithstanding these drawbacks, the operations realised a profit, and the result of six days of February and seven days in March, including \$700 for gold specimens sold, was \$5012.70 c. A profitable yield has thus been established, as the expenses are calculated at \$100 a day, and on the erection of a new boiler more profitable results may be expected.

Business in Bank shares has undergone an extraordinary extension—numerous inquiries having been made for many stocks, both home and colonial. Australasia Bank shares have further risen; British North American are 12, and Colonial 25; higher. London and County, Provincial of Ireland, and South Australia, are likewise rising, and all other shares command full prices.

Dock stocks are firm, at the advanced prices lately established.

In the market for Steam-Boat shares the inquiry is mainly confined to Peninsular and Oriental, which are still rising. Royal Mail Steam shares are steadier, and General Steam Navigation are scarcely so good.

In Insurance shares the change in price during the week consists of a rise in the following:—County shares, now quoted 101; Law Fire, 4; Universal Life, 41. Other stocks are firm.

Of Canal shares the quotations are—Aston and Oldham, 135 140; Coventry, 200; Grand Junction, 48; Grand Surrey, 324; Leeds & Liverpool, 450, 455; Loughborough, 510; Oxford, 135; Regent's 16; Stafford and Worcester, 405; Stourbridge, 290.

Prices of Gas and Coke Companies shares range as follows:—British, 10½; City of London, 12½; Equitable, 27; Great Central, 13½; United General, 20½; Westminster Chartered, 39½; Imperial and United General shares are higher.

Water-Works stocks are—East London, 156; Grand Junction, 65½; Kent, 80; Lambeth, 97; New River Company, 60.

Miscellaneous shares are—Assam Tea Company, 10; Australian Agricultural, 16½; Australian Trust, 21½; British American Land, 25 ex div.; Canada Company, 50; Hudson's Bay Stock, 206; Price's Patent Candle Company, 22½; South Australian, 24½. The Assam Tea Company's shares are still rising.

**WHEAL PROVIDENCE—LIABILITY OF SHAREHOLDERS.**—The opposition to being placed on the list of contributors, under the Winding-up Act, exhibits somewhat forcibly the terror which has seized on a large class of the community who have speculated in shares. Now, in this company the debts are shown to be only 2500/0, whilst, to take the lowest estimate of the mine, &c., the property would appear worth 30000/0: indeed, the purser's valuation is 50000. Master Blunt, in *limine*, expressed himself thus—"I suppose the struggle will be to put on the list." Not so, however, as Mr. Pember strongly opposes the official manager whilst seeking to make him a contributory; and, if we are rightly informed, intends appealing against his decision.

**NISTER DALE IRON COMPANY.**—Yesterday, a meeting was held before Master Farrer for the purpose of substituting the names of Mr. Joseph Manning, Mr. Thomas Parsons, and Mr. William Hudson, as the executors of Mr. Henry Pywell, deceased, on the list of contributors. The proceedings were, of course, merely *pro forma*, and the Master allowed the application.

**IMPROVED PROCESS FOR OBTAINING NICKEL AND COBALT.**—Mr. H. H. Vivian, of Singleton, Glamorgan, has secured a patent for obtaining certain proportions of nickel and cobalt, or one of these metals, which are well known to be contained in all copper ores, which, as they are at present treated, go entirely to waste. The process separates the nickel and cobalt from the copper in the form of arseniurets in a marketable state, and may be said to be divided into two branches, operating on four classes of ores. The first of these are ores or slags chiefly in an oxidised state; these are treated with a sufficient quantity of arsenical pyrites to combine with the whole of the nickel and cobalt and a portion of the copper; sufficient sulphur, in the shape of iron pyrites, to combine with the remaining copper to form a regulus, and coal to reduce the oxides. These are melted together and tapped out, and when the slag has been skimmed off, and the pigs cooled, the nickel and cobalt will be found settled with the arsenic at the bottom. The quantities of arsenic and sulphur, which should never be used in the free state, vary; for a copper regulus of 70 per cent., 8 cwt. of arsenical pyrites, 12 cwt. of raw ore furnace metal, holding 30 per cent. of sulphur, and 2 cwt. of coal to every ton of oxide of copper. The second class consist of ores and regulus, containing small portions of nickel and cobalt not oxidised. After tapping a regulus of about 70 per cent., the patentee adds from 8 to 5 cwt. of arsenical pyrites to every 30 cwt. of regulus. This is re-melted, and run into a sand bed, when the nickel and cobalt will be found concentrated at the bottom. The third class consists of regulus, or ore, containing large quantities of nickel and cobalt not oxidised. In such ore there is generally sufficient arsenic; if not, more must be added. The metal is cast into pigs, and a metallic bottom of nickel and cobalt obtained. The fourth class consists of cupreous alloys; these are treated by being added to either of the first three charges, or by granulating them by running into water, adding arsenical pyrites, and proceeding as with ores of the first class. In either of these operations the impure arsenical compounds are reduced to powder, calcined and melted, with further additions of arsenic, sulphur, and silica, to separate the nickel and cobalt, and converting any other metal to a regulus. Of arsenical pyrites 10 cwt. are used to every 70 cwt

## NOTICES TO CORRESPONDENTS.

**GREAT COWARTH MINE.**—Sir: In your last Journal there is an article on the Weston Mines, unjustifyably reflecting on the management and machinery of the White Grit Mines. There can be no objection to parties landing their mines, but they have no right to do so at the expense of others; and I think, on reflection, they must see the improvidence of such conduct.—E. Shrewsbury, May 15.

A North Devon Man shall have the information he requires respecting the Cost-book System in our next Journal.

**S. P. Z. (Ashby-de-la-Zouch).**—The company is, perhaps, in a better position than many of its rivals. The depreciation of the shares has been caused from the conflicting nature of the correspondence received from them; greater difficulties than were originally apprehended have been met with—these, in conjunction with other local causes, have contributed to retard the progress of the company. The reaction in the market does not at all affect the value of the shares as an investment.

**POLKRAH CONSOLS LEAD MINE.**—Sir: I should be glad to be informed as to the prospects of this mine—are the managing men to be relied on? I have some shares, but can get no account as to how the money is expended, though repeated calls are being made.—W. C. M.: Long Acre, May 16.

**T. R. (Wakefield).**—We are obliged for the communication, which shall have attention. **MINING COMPANY OF WALES.**—Can any of your correspondents inform A Holder of Twenty-four Shares what has become of the conductors of this scheme, and whether other adventurers are to be found? Is not some explanation due from Mr. St. Pierre Foley—but for whose name being attached to the prospectus, I should never have become a shareholder?

**W. L. H. (Highbury).**—We are obliged for the communication, which it will be seen has been attended to. All information respecting mining progress is acceptable.

**J. C. G. (Wakefield).**—We cannot further advise our correspondent. Have the particulars of his claim, as a shareholder in the West Poldoth Mining Company, been submitted to the directors? We feel assured Mr. Murchison or Mr. Hancock would gladly render him all assistance in their power.

The Columbian Mining Association was established in 1825, with a capital of one million sterling, in 10,000 shares, of £100 each, of which 552, per share was paid up; and a correspondent wishes to be informed what dividends (if any) were paid during its existence? and what amount per share (if any) has been returned to the shareholders out of the realisation of assets? The same information is requested respecting the first New Granada Company, started by the same parties a few years afterwards.

**ST. AGNES BEACON MINE.**—The committee should convene a meeting, and lay a statement of their affairs before the proprietors, to convince them all is right. They should also have the set inspected by some independent agents, and publish the report in the Journal. This would be a more commendable course than reflecting on the "three parties who gave acceptances for their shares, which have since been disallowed." The publication of the letter from Mr. L. would compel us to insert several, in reply, without affording any real satisfaction to those interested.

**J. F. (Peterhead).**—There has been no discussion recently in the *Mining Journal* on the subject of street paving. Mr. Thomas Allan, of Glasgow, patented, in 1851, a new material in shape for paving roads—cast-iron, of which notices will be found in the Numbers for 16th and 23rd August, 23rd Nov., and 6th Dec., in that year.

**A. Miner.**—The views propounded by our correspondent on the subject of Home and Foreign Mines, have been often discussed in our columns: however for a time speculation may be diverted, it generally returns in due course to the regular channel.

**A. Constant Reader (Cheltenham).**—The suggestion of our correspondent is by no means novel, more than one similar machine having been brought before the public; and in our Journal of Feb. 26, 1848, we gave a diagram of Parker's patent annularator, consisting of an elegant case, the numbers, corresponding with the numbers of the rooms, being engraved on a metal plate in front, each figure covered with a semicircular plate, which conceals it, until the bell is struck by the communicator from any room, when the shield is immediately withdrawn, and the number exposed. So compact was this arrangement, that signals for 300 rooms would require a square surface of only 30 in.

**Boreas (Nottingham).**—Biddle's Aeolian engine was described and illustrated by a diagram in our Journal of March 4, 1848: it consists of four arms, turning horizontally, on the end of each of which are two sails, opening like the leaves of a book, of which the arm itself forms the back. Each pair is connected by a rod, with the sails on the opposite arm, and placed at such an angle that they re-act mutually, so that when one pair is spread to the wind the others close, and present only an edge in revolving against the current.

**WHEAL ARTHUR.**—We are requested to state that the purser appointed at the late special general meeting was Mr. William Watson, of Callington; and Mr. William Mathews, the engineer.

**DEATHS IN COAL MINES.**—A correspondent, writing from Manchester, calls attention to the fearful and increasing amount of deaths from explosions in our collieries; and states, sad as it is, parties well acquainted with the subject are surprised that under existing circumstances they are not even more dreadful. After some very appropriate remarks, he proposes as general remedies intelligent and well-paid officers, thoroughly acquainted with the nature and properties of gases, the barometer, anerometer, and other instruments; educated, disciplined, and steady workmen; clear and simple rules; thorough and efficient ventilation; the sole use of safety-lamps in every mine, not as a substitute for, but in addition to, perfect ventilation; and full and correct plans and sections. A most excellent code of rules is appended, which we shall notice further on an early opportunity.

\* \* \* We must impress upon our correspondents, the necessity of invariably furnishing us with their names and addresses—not that their communications should, consequently, be noticed, but as an earnest to us of their good faith.

## The Cost-book System.

Having repeated applications for particulars respecting the Cost-book System, we have reprinted, as a pamphlet, the paper descriptive of its principles and practice, which appeared in the *Mining Journal*. Copies can be procured through any bookseller or newsman, or at our office, price 6d.

\* \* \* It is particularly requested that all communications may be addressed—  
TO THE EDITOR,  
*Mining Journal Office,*  
26, FLEET STREET, LONDON.

Post-office orders made payable to Wm. Salmon Mansell, as acting for the proprietors.

THE MINING JOURNAL  
Railway and Commercial Gazette.

LONDON, MAY 22, 1852.

The *Mining Journal* is published at about Eleven o'clock on Saturday morning, at the office, 26, Fleet-street, and can be obtained, before Twelve, of all news agents, at the Royal Exchange, and other parts of London.

It is most gratifying to know that in every direction the SOCIETY FOR THE PREVENTION OF THE LOSS OF LIFE BY EXPLOSIONS AND OTHER ACCIDENTS IN COAL MINES, is everywhere meeting with the most cordial reception. Never in the long and fearful history of the mines has it been of greater necessity. The deaths, some of them too horrible even to relate, have been increasing during the present year; and already within 21 weeks are recorded 340 in the *Mining Journal*. Should the same ratio continue, it will be the most disastrous year for the mines that they have ever known—the year 1852 will have seen a death list of not less than 1000 miners.

But for the humane aids of science, which they have already received, the coal mines of Britain would be desolate and unworkable; yet it is impossible that men can continue to follow so dangerous a profession, in which the long life and peaceful death of other occupations are almost invariably denied them.

Many instances are known to us where men have left the mine at all sacrifices, and refused to engage their children in the scene of their labours, which death has made his peculiar abode, and in which destruction stalks day and night uncontrolled.

There is not an explosion occurs where pitmen, however brave, do not leave the mines, or turn again to them with dread and repugnance. When there, they are watchful as those ever watch when all that is dear to them on earth is at stake—their own lives and those of their children; and we cannot see them maligned in death with indifference.

We will not allow to pass the charge which has been made—that the men themselves are generally the cause of these accidents, from criminal neglect, or fool-hardy risk. We emphatically deny the unfathomable assertion; such cases forming the exception in the too frequent accounts of explosions. There are facts in our records to show that the men who are the victims, to whom it is matter of life and death, have been as the sentinels, as well as the workmen, at the post of danger. One day in August last, the pit at Washington, which for sometime had been in an unsatisfactory state, became so foul that several men left their work, and told their officers of the threatened danger. These officers, as proved at the inquest, neglected this warning. The mine-storm burst forth, blew up the pit, and killed 12 people; while those who had left it, foreseeing the danger, and giving the warning, were saved. There are many instances where

men in their solitary labour have detected the elements of mischief accumulating around them, and, giving timely warning, have laid off the pit, and saved their fellow-men.

Neither can we permit to pass unnoticed the cry, that it is by removing the tops from the Davy lamps that produces such accidents. It is known to every one that this very lamp is, under certain contingencies, productive of the very danger it is meant to avert—it being admitted by its discoverer, who showed at a blower of gas in one of the Durham mines that it readily passed the flame through the gauze. It was demonstrated by GURNEY, in 1822; and afterwards by HEMMING, MURRAY, PABEIRA, BIRKEBECK, and other men of science. A Davy lamp running through an explosive atmosphere at a rate of 5 ft. a second, not four miles an hour, passes the flame, ignites it, and produces explosion. This was shown to the Committee of the House of Commons in 1835; and that Committee, in its report, gave a warning on the subject. It was clearly demonstrated by the Shields' Committee and the Belgic Commission, and is now admitted as an indubitable fact in this scientific instrument.

It has been under it that explosions have frequently taken place. It was so at Wall's-End, when 102 people were destroyed; it was so at Haswell, when 95 were destroyed; it was so at Killingworth, with its 30,000 cubic feet of air, and its 100 miles of passages, when it exploded in November last, killing several miners, and the lamps were, as usual, all found uninjured. With such an instrument, beautiful as are its principles, when explosions do occur under its employment, it must not be asserted that the men, by some mad and desperate act, insanely destroyed themselves. It is only decent as well as just to wait, in such cases, the result of investigation, before throwing such gratuitous aspersions upon the silent dead. Truth and justice to the miners compel us to say this much.

But the whole subject of mine accidents requires revision: The great field for the energies of the able viewers of mines, and we are rejoiced there are so many, and the enlightened philanthropy of science lies full before them. Work of the most important nature is to be done.

Most of the mines of Scotland, many in Wales, and large numbers of them in the midland coal districts, have no ventilation at all. They are left entirely to natural ventilation, that sometimes lets air into the mines, and sometimes shuts it out, as in some of the Government mines in the Forest of Dean; and it would not be difficult to prove that even some of the best mines, with the ablest and most experienced viewers in England, are still deficient of ventilation in some parts of their workings; and that there, every now and then, the lurking enemy from his dark recesses presents himself in force, ready to burst into action, and, but for continual watchfulness, would do so in explosion. The time is propitious for entering on this national subject for staying these dire calamities.

We again hail this contemplated national society with hope: if it fails, we would indeed despair. We understand that two honorary secretaries have been appointed, who are now preparing an appeal to the country for the protection of our humble, brave, and meritorious countrymen. This cannot but be universally responded to in a manner to add another laurel, in its humane purposes and in its results, to the character of the country.

We expect to be able to give this appeal next week, which we hope will enter into a full detail, too generally unknown, of the scenes and occurrences of these terrible disasters.

At the moment of concluding this article a fearful announcement has just reached us—that at Chorley, in Lancashire, another pit has exploded, and 43 more human beings been destroyed. We will give such sad particulars as may reach us before going to press. We repeat, if something is not speedily done to arrest these fearful calamities, the coal mines will become a terror to miners, and they will seek other employment, to the serious injury of this great source of national riches and strength.

At the Society of Arts, on Wednesday evening, an instructive and interesting lecture was delivered by Professor ANSTED, of King's College, on "Non-metallic Mineral Manufactures." Mr. ROBERT STEPHENSON, M.P., in the chair. It was introduced by an enumeration of the various specimens in the Great Exhibition of works in marble, plain and inlaid, and those in artificial stone, a commentary on the taste displayed in the finish, the progressive improvement in this department of art, its general features, and capability for great extension in use among the middle classes. The lecturer divided his subject into three heads—natural marble and other stones, scagliola and other artificial productions, and bricks, terra cotta, and clays of various kinds and forms. The delicate and elaborate works in the hardest stones, produced among the nations of the East by slow processes, were contrasted with the rapid manner by which gigantic blocks of granite were cut and finished in this country; and it was suggested that advantage might be taken of this patient industry by sending out models, to be there imitated in more refractory and enduring material. From the prolific abundance of marble and other stones in England, great perfection in our public and private buildings might be expected. Such, however, was not the case, and too frequently, to save a little cost, the eye was pained by the sight of materials ill chosen, badly worked, and, still more, unseemly placed. In the Exhibition, the limestones generally were not well represented, while the slates and marbles of Derbyshire and Devonshire held a prominent position; and he hoped to see the day when the public would reap the advantage of the vast stores of beautiful marbles possessed by these two counties in comparatively inexhaustible abundance. Mr. ANSTED here alluded to some specimens of light-coloured fossil limestones on the table, not picked, or rare, but such as might be had at known prices. Bedroom chimney-pieces, for instance, might be had for fifteen shillings; those for the parlour and drawing-room for a pound and upwards; slabs, sideboards, &c., in proportion. Although we had not attained that excellence which ought to be expected, the Exhibition indicated an increasing demand for good materials and superior workmanship. The most interesting of our manufactures in marble was that in imitation of the Florentine mosaic, introduced into Derbyshire some few years since, and which now furnished employment to a considerable number of intelligent workmen. The black marble of Derbyshire was well worthy of notice, as also that produced in the west of Ireland. Ornamental and inlaid work of artificial stones and cements were considered not desirable, but that it would prove more advantageous to avail ourselves of the vast stores of those materials which Nature had so abundantly provided around us. In noticing the marbles of foreign countries, the lecturer said that Italy had sent scarcely any specimens of stone, while she contributed a most interesting series of manufactures in marbles, alabasters, and spar. Malta had some good specimens, in style somewhat between Florentine mosaic and the Derbyshire productions. France, Belgium, Spain, and Portugal were but poorly represented, but Sweden and Norway had some fine specimens of granite.

The malachite manufactures of Russia were next noticed, particularly the pair of doors which caused so much interest—the amount of the labour on which was represented as almost to appear fabulous. Malachite cost in St. Petersburg 12s. to 15s. per lb.; and in fitting the pieces into which the veneers were cut, not to distort the veins, but to have the appearance of one vast slab, 2 lbs. of stone were wasted for every 1 lb. brought into use. This made the cost of material alone, 3000 lbs. in weight, about 2000*l.* and in labour it took as many hands as were able to work at these doors over twelve months to complete and polish them. The garden chairs from India, presented to the QUEEN, were noticed, with other Cambay manufactures in jasper, jade, agate, &c. The mosaic generally were the same as those of two centuries ago; variety and improvement were wanted. The Exhibition had already effected much; and should the artists of the world have an opportunity for a second competition, he had no doubt this branch of art would be greatly and rapidly advanced.

The manufacture of scagliola, and other artificial stones and cements, for which England and Italy were pre-eminently distinguished, were next described; and the manufacture of plaster of Paris, Portland, MORGAN'S, KERNE'S, RANSOME'S, and other artificial materials, and their several properties and values commented on. Terra cotta works had only been introduced at a comparatively recent period; and it was difficult to foretell the

result. After slightly noticing the manufacture of bricks of various forms, Mr. ANSTED entered into a brief recapitulation of the various details; and referring again to the English manufactures of this class, somewhat strong and imputing to artists in this country a general want of taste—the specimens being nearly confined to the imitation of models adopted from other countries, which strikingly illustrated the necessity for the diffusion of artistic education among those engaged in their production, and thus inculcate improved taste. It should be remembered that what was beautiful in one material was not so in another; and sound scientific education should be added in all our schools to writing, verbal and mathematical instruction; and that cumulative faculty which so prominently distinguishes man from the inferior animals would thus acquire the necessary cultivation. It was true that our fiscal laws had greatly interfered with tasteful production; but still there was a vast deficiency of useful knowledge among the population generally. We have learned through the Great Exhibition a salutary lesson, which taught us that we had yet much to learn, much to do, and much to expect.

The chairman, in making a few observations on the very excellent and instructive lecture they had heard, jocularly alluded to the pungent and somewhat severe remarks on the want of taste displayed in this country; and said it was not for him to decide on the difference in value and importance between a steam-engine and the shape of a vase; he was sure, however, that all would appreciate the valuable remarks made in the course of the lecture. A vote of thanks was very cordially and unanimously passed to Professor ANSTED.

The extraordinary, novel, and extensive building for the Exhibition of the Industry of all Nations in 1851, erected for a remarkable occasion, which contained the largest collection of the products of science and the arts which history has had to record, and was visited in 24 weeks by 6,000,000 of persons from all parts of the civilised world, has been doomed by the so-called representatives of the people to demolition, in direct opposition to the public wish; and it has been left to the spirited enterprise of adventurous private wealth, so characteristic of this country, to preserve this interesting memento of the late great gathering, and to secure its continuance on a system, we doubt not, will give almost universal satisfaction. The sum of 70,000*l.* has been paid for the building; and the purchasers are the promoters of a company—the object being to re-erect it on a site close to London, but out of reach of its smoke and brick walls—open, picturesque, and rural—which has been secured near the Brighton Railway. A railway station will be erected in the building, communicating with the London-bridge and Bricklayer's Arms stations by an exclusive line of railway—one moderate payment including conveyance there and back and admittance to the structure. "The Crystal Palace Company," with a capital of 500,000*l.*, in 100,000 shares of 5*l.* each, is formed for the purpose of securing this really national building, and converting it into a winter garden, in which all the charms of the country will be perpetuated through winter and summer. Plants and flowers from every climate on the globe will here flourish in unison; sculptures of the most eminent living artists of every nation; casts of the works of the most renowned sculptors in every age; architectural remains and casts of monuments of past and present times will occupy every prominent part of the building. Models of the most interesting and useful machinery will be kept constantly in motion by steam power, by which every information may be obtained of the processes and products of every staple manufacture of the country; fountains of the most elaborate construction, worked by steam, will be introduced, rivalling those of Versailles; and the millions will thus have access to all the enjoyments of art, science, beauty, skill, and mechanical invention, hitherto accessible only to the educated and the rich; while, from the experience already obtained in Hyde Park, the arrangement and classification of the various objects of interest will be far more complete and instructive. Surrounding the imposing structure will be the "Crystal Palace Park," formed with all the peculiarities for which the parks of England are famous. An area of 150 acres in extent will be ornamented with every tree and plant which our atmosphere has adopted or acclimated. Periodical shows of flowers and plants will be held at stated intervals; and throughout every department that British character which it has already won will be endeavoured to be stamped upon it. Messrs. FOX and HENDERSON have contracted for the re-erection of the building; Sir JOSEPH PAXTON superintends the garden department; and, from the most careful estimates, 150,000*l.* will be ample to re-construct the Crystal Palace, with such improvements and enlargements as are requisite to give it a permanent character, with a small addition for the winter garden. Well-known eminent contractors have offered to maintain it in thorough repair for a long term of years; and, looking at the results in 1851, there is every reason to expect that, while a large return will be received for the capital invested, the means of recreation, and the most valuable instruction, will be opened to the working population at their leisure hours, tending to elevate the mind, mature the intellect, and produce a high moral tone among those classes who have hitherto had recourse only to debasing amusements. It is fully expected that the Crystal Palace will be re-opened to the public by 1st May next.

In the chapters of accidents in the last few numbers of our Journal are records of explosions of fire-damp, drowning, falling down shafts, falls of roof, and other casualties unfortunately attending the working of our collieries, involving, in a period of about three weeks, the immolation of something like 130 human beings, leaving behind them an inconceivable extent of destitution and distress, among scores of bereaved widows and fatherless children, and an immense destruction of property. Among all these accidents, the most prolific source of these fearful catastrophes is the collection and instantaneous explosion, on the application of flame, of large exhalations of carburetted hydrogen, and the inquiry very naturally suggests itself, even to the minds of persons but slightly acquainted with the subject, how far is our present system of colliery ventilation in such accordance with the natural laws of pneumatics as to produce the most perfect results possible? and are there any plans yet untried, possessing capabilities likely to improve the condition of the underground workings? It gives us much pleasure to be able to state that in a few months, at a colliery in South Wales, a system of working the underground haulage will be in operation, on a principle, we believe, never yet adopted, and one by which, while great economy is effected, a powerful auxiliary, at least, in ventilation is secured, if it does not, indeed, establish an entirely new system in the airing and working of collieries. We abide to the railway on the atmospheric principle, patented by Messrs. CUNNINGHAM and CARTER, so often described and noticed in our Journal, who, after six months' struggle to bring it into operation for public railways without success, have the satisfaction to find it appreciated by some private individuals largely connected with collieries, who have decided on having one of their mines worked by it, and have given orders to the patentees accordingly, and which we are sanguine in the expectation will lead to its very general adoption.

The principle on which this system of propulsion is founded is, as most of our readers are aware, that of the power obtained by the exhaustion of a thoroughly closed tube, and the consequent pressure of the atmosphere, according to the extent of such exhaustion, on the pistons of vacuum engines placed at regular intervals on the line. Now, the prime moving power, and the air-pumps being outside the mine, and the working force being the air contained in the excavations themselves rushing through the atmospheric tube, to be instantaneously replaced by pure air from outside, we have the novel, but perfectly natural and scientifically correct, process of the very power which performs the haulage of the coal on the underground railways, making room for a continuous stream of pure and uncontaminated air, which, if of itself not sufficient for perfect ventilation, must greatly add to the effect produced by other means and to the quantity coursing through the mine. The system will also entirely supersede the plan of working in the mine with endless ropes, at once troublesome, unsatisfactory, and expensive, may be applied to underground pumping; and as the system becomes fully developed, and its capabilities known, we are strongly of opinion it will be found applicable to many of the details of colliery operations not at present contemplated, that it will prove a most valuable and important agent in preventing such wholesale destruction of human life as we have hitherto been obliged to witness, and that the colliery proprietor will find it a power for prosecuting the necessary works, at once safe, certain, and economical. We shall shortly again return to the subject, when we shall be in a position to describe the colliery, and which we are sanguine in the expectation will lead to its very general adoption.

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## ROYAL HIBERNIAN MINES.

In addition to the remarks in our last respecting the grand *séte champêtre*, preparing on these mines for the 31st May, to celebrate the opening of Headley's shaft by Mr. Henry Gibson, of 17, Gracechurch-street, and who will be accompanied by twelve of the directors, we are informed that the ceremony, as arranged for this auspicious and soul-stirring event, has already excited vast attention, and that the assemblage of persons of distinction, the clergy, military officers, the members of the Kerry Club, neighbouring gentry, and others, will amount to many thousands, for the reception of whom preparations have already been made.

Mr. Gibson and the directors leave London on Wednesday next, and purpose remaining at Dublin that night, proceeding to Limerick next day. They will, in compliment to their noble-minded friends, wear green silk scarfs, emblazoned in gold with the harp, crown, and shamrock, with handsome rosettes to correspond. A salute of cannon from the hills, and music in the vale, will welcome their arrival. Should the weather be seasonable, it will be one of the gayest and most exciting ceremonies that Ireland has witnessed for many a long day. Flags of every nation will adorn the festive scene; and the labouring population will take home with them not only the remembrance of it in their honest bosoms, but a lasting testimony to keep it in their fond remembrance.

Mr. Gibson, with the spirit that is characteristic in all he undertakes, goes amongst them, determined to give their mineral soil the benefit of the capital and science he has always at command; and where he is met by the landholder with similar liberality, their properties are sure to have a full and fair trial;—thus money will be extracted from the wilderness, not only to the landholder's benefit in the receipt of dues from what now lies barren and unproductive, but also by giving employment to those of the labouring population who are willing to dig and delve for mineral. By such means, emigration may at once cease; there will be found employment for all in their own native land. They will separate the ore from beneath, instead of tearing themselves away from the ties of family kindred, to which every feeling heart has an instinctive fondness. In Mr. Gibson they have found a true friend—free-hearted, kind, benevolent, and generous. Ireland will long have cause to bless the hour when first he put foot upon its soil. He now seeks to make a deeper impression, by opening it to a depth likely to pour forth the vast treasures that have been hidden beneath from the earliest period; and the first step is the sinking of Headley's shaft, on Monday, 31st of May, to celebrate which auspicious event the ceremonies alluded to are entirely devoted.

## GOLD IN ENGLAND.

The announcement, first made in our columns, of the discovery of gold in Devonshire, alluded to in our two last Journals, has naturally created considerable excitement, and the question is repeatedly asked, "Is it really true that gold has been found in England in sufficient abundance to be remunerative?" There appears little doubt of it; and the manner in which the enterprise for the development of the mine has been taken up proves beyond demonstration that a re-action has taken place in its favour, which must have the effect of checking the investment of capital in California gold companies and directing it into a safer channel—one which cannot fail of benefitting this country, as well as giving a stimulus to native industry. There is a Dorado within our own shores—another cynosure, besides California and Australia, to which the attention of the British public should be directed. Let not the staid matter-of-fact man be sceptical as to the existence of this aureate region. Let him not believe that it is a mere myth, created by the interested and too sanguine. Doubt is no longer possible in the face of the testimony and evidence put forth by the Britannia Gold Company, while encouragement is held out to all to inspect and examine for themselves. The wonder now is, not that the gold is at North Molton, but that it should have laid so long in abeyance. It should, however, be recollect that the same observation applies to California. Although many scientific men had crossed the Rocky Mountains, although keen eyed trappers had traversed the valleys in every direction, and tribes of Indians had resided there for centuries, yet, for countless ages, the glittering dust had sparkled in the sunshine, and spangled the mud of the rivers and streams, unseen by the eye of civilised man. The astute Humboldt found not gold; Douglas, the agent of the Horticultural Society, likewise passed over the precious metal; the rangers of the Duke of Devonshire and the Earl of Derby, for plants and animals, saw not, or did not know, the glittering ore, although the one handed down most interesting details on numberless subjects, and the others enriched our Flora and our Fauna. The great expedition under Commodore Wilkes included the skilful mineralogist and geologist, Dana, who wrote a geological work, but made no allusion to gold. Even Col. Fremont himself in his journey, for which the "gold" Victoria medal of our Geographical Society was given him, only completed our acquaintance with the geography and topography of California, without even suspecting the existence of the Dorado, which the cutting of a mill at last accidentally revealed shortly afterwards. These facts are, therefore, good evidence that there is no solid ground for doubt as to the deposit of the precious metal at North Molton because it has not hitherto been brought to light. The North of Devonshire contains just that description of rocks, Devonian and Silurian, possessing a crystalline structure produced by the contact of igneous rocks, which is so favourable for the production of metallic veins. In all probability, the aborigines of this country obtained a good deal of gold dust from the sands of the rivers which have, or had, their source in the hills of North Devon; but, as the whole country has been elevated, the ancient streams have changed their course, or dried up, and their very site become obliterated in the lapse of time, it is more than probable that copious stores of the precious metal are quietly reposing in the ancient river beds in the ravines and valleys, and on the flanks of the hills of North Devon—the golden alluvium formed by the denudation of the hills—ready to reward the spirit and enterprise of the fortunate discoverer. Who knows that there may not be a rush to this British Ophir, this modern "Tom Tittler's" ground, to pick up gold and silver, and the word "diggings" be as "familiar in our mouths as household words?" Supposing that the yield be only small, as compared with the assays and reports, or even that the apparent trifling return of less than  $\frac{1}{2}$  oz. of gold to a ton of ore gives a clear profit of more than 60,000, per annum to the shareholders of the St. John del Rey Company, it is impossible to say, as is justly remarked in the prospectus of the Britannia Mine, "what quantity of the precious metal may be found in the future workings; but enough has been ascertained to induce the most sanguine expectations that the result will be highly productive and profitable." In the meantime, no reports from this new Dorado should excite our surprise, as the experience of the last few years has amply confirmed the correctness of the axiom that "truth is stranger than fiction."

GOVERNMENT SCHOOL OF MINES.—The first examination for the scholarships in this institution, recently founded by his Royal Highness Prince Albert on behalf of the Prince of Wales, and called "the Duke of Cornwall's Scholarships," was brought to a conclusion on Saturday last, after a most severe examination. Mr. Henry Francis Blanford, being at the head of the list, obtained the scholarship (80*l.* per annum for two years) and Mr. Robert Hunt the second scholarship, for one year. We observe, in the estimates for the civil service for the present year, that great complaints were made by the directors with respect to the smallness of the laboratory connected with the school. It is to be feared that the value of property in Piccadilly may throw some difficulty in the way of the speedy augmentation of the premises; and we trust—remembering the pledge which the Royal Commissioners gave in their preliminary report upon the disposal of the surplus funds—that, if there is any truth in the report of the commission having purchased land in the neighbourhood of Knightsbridge, it has been obtained solely with the view of facilitating the extension of this and kindred industrial institutions, which the difficulty of obtaining suitable sites in the metropolis at present so greatly retards.

MINING IN IRELAND.—Other advantages than money gain appear to await those who are now interesting themselves in developing the mineral wealths of Ireland. Our friend, Mr. Reuben Plant, of Holly Hall, Dudley (one of the successful adventurers in the Great Welsh Mines), being on a visit of inspection, preparatory to the grand doings at the Royal Hibernian Mines, so far ingratiated himself into the good opinions of the men of Tralee, as to receive from them an invite to represent them in Parliament. We know Mr. Plant, and in sincerity, can say few men are better fitted for the onerous task; and are perfectly satisfied, if returned, on this or a subsequent occasion, his constituents will have no cause to regret, while the general interests of the locality will derive all the advantages possible from the able advocacy of an intelligent and honourable man.

## THE WEST CORNWALL RAILWAY.

TO THE EDITOR OF THE MINING JOURNAL.

SIR.—I am much gratified to find the poor, degraded, and much-neglected railway labourers have met with a friend in one who signs "John Bull," in your last Journal. I have long looked upon the "truck" system as a great injustice to the men, and, as such, deserving the reprobation of all fair dealers. The men should be paid weekly in cash, or, if paid in goods, they should be charged no more than the price at which the same goods can be purchased elsewhere. I hope Messrs. Ritson will take the advice of Mr. Bull, or I think it likely they will find the system now followed will become a nuisance to themselves. "A word to the wise is sufficient."—A FRIEND: Camborne, May 19.

## RAILWAY CONSTRUCTION—COMBINATION DEFEATED.

The Permanent Way Company's Bill has been defeated before a Select Committee of the House of Commons, Lord Hotham, chairman. The promoters of this bill consisted of persons connected as engineers, or otherwise indirectly concerned in the construction of railways; consisting of Mr. William H. Barlow, engineer of the Midland Railway; P. W. Barlow; Mr. Samuels, formerly engineer of the Eastern Counties; Mr. P. Ashcroft, superintendent of Permanent Way of the Eastern Counties; and a Mr. Richardson, who has been employed in railway construction. These parties had united together, as it would appear from the opening address of their counsel, to purchase up all patents at present obtained relating to permanent ways of railways, and sought powers also to purchase future patents relating to the same object—a power that was looked upon with considerable jealousy by the committee. The two witnesses called by the promoters of the bill were Mr. Samuels and Mr. May, of the firm of Ransome and May, who endeavoured to maintain the principle that railway companies and the public would be benefited by a combination of all inventions relating to the formation of railways, being in the hands of an incorporated company, and possessing exclusive powers, to which reference has been made. On this, as on all other questions, there happened to be a difference of opinion, and the promoters of the bill found, to their great astonishment, an array of opposition against their views as to railways and the public being benefitted, which they did not at all anticipate.

The opponents to the bill, Messrs. Adshead and Greaves, the proprietors of Greaves's patent conical sleeper, which is adopted by Mr. Robert Stephenson for the Egyptian Railway, found most unexpectedly an influence spontaneously offered to their aid, which presented such a phalanx of first-class engineering strength, that completely paralysed the efforts of the promoters of the bill, and they concluded, after the first sitting of the committee, to withdraw it.

A judgment may be formed of the estimation in which this railway construction monopoly bill was viewed, when it is seen that out of the number of most eminent engineers who tendered to give evidence in opposition to the bill are to be found the names of I. K. Brunel, Esq., C.E.; Joseph Locke, Esq., C.E., M.P.; J. M. Rendel, Esq., C.E., President of the Institution of Civil Engineers; Charles Vignoles, Esq., C.E.; John Fowler, Esq., C.E.; J. E. Errington, Esq., C.E.; J. McLean, Esq., C.E.; —Robertson, Esq., C.E., &c. The opponents of the bill would also have had the able assistance of John Hawkshaw, Esq., C.E. The opposition to this bill was most timely, it having been made at the eleventh hour by the proprietors of Greaves's sleepers. The bill appeared to have escaped the notice of those who would have been, by the powers and operations of it, most seriously concerned. The gentlemen whose names are above-mentioned, so importantly connected with the construction of railways, must have been impressed with the restrictive and mischievous influence which the possession of powers sought to be possessed by the Permanent Way Company's Bill would inflict, inasmuch as it would place both railway companies and engineers under an influence so at variance with the free competition which should exist for the promotion or advancement of improvements in railway construction by individual effort or enterprise. It would, in fact, place the railways within the power of a combined monopoly, to charge their own terms for patent right for the most important materials employed in the construction of railways; and it is owing to Messrs. Adshead and Greaves, aided by the important assistance of the eminent engineers whose names have been mentioned, that the efforts of the attempted railway construction monopoly have been so signalily defeated.

RAILWAYS.—Messrs. J. Robinson, of the Ebbw Vale Iron Company, Charles May, Westminster, engineer, and W. T. Doyne, of Euston-square Station, C.E., have patented some improvements in the permanent way of railways, which consist in so constructing the permanent ways of railways as to obtain for the rails continuous bearings, or supports, by the under-sides of the rails resting on longitudinal plates of wrought-iron. The drawings show several methods of combining rails, with angle iron bearings, to obtain this result. The rails are of various forms, but the same peculiarity of construction is involved in all the combinations of rails and bearings shown. In the case of single-headed rails, the bearings are placed on each side of the rail, which they support between them, with its lower edge resting on one or both of the bearings, and bolts are passed through the rail and bearings to connect them to each other. When bridge rails are used, the bearings are still of an angular shape, and are so disposed that one flange of each of the bearings shall enter the hollow of the rail, while the rail is supported by its lower edges resting on the surface of the bearings. The bearings are in all cases placed so as to break joint with each other, and with the rail which they support.

IMPROVEMENTS IN LOCOMOTIVE ENGINES.—Messrs. Hemson and Sutton, the American engineers, have patented a peculiar arrangement in locomotive machinery, by which the reversal of the motion is much simplified. The steam is admitted on one side of the pistons only, the cylinders being single-acting, the piston-rod only operating on the driving-wheels during one-half the stroke. There are three cylinders, the cranks placed at angles with each other of  $120^\circ$ , and one immovable eccentric for each cylinder is made to work the engine both ways, thus superseding the ordinary complicated reversing gear. Each cylinder is furnished with two valve boxes and two valves, two induction and two ejection pipes, each branching to the separate cylinders, and each provided with a valve for opening and closing the communication with the boiler. By simply opening one valve and closing the other, the motion may be reversed, and the engine worked in either direction.

SUBMARINE TELEGRAPH.—Messrs. Shepherd and Button's patent submarine telegraph has been laid down under the River Arun, on the South Coast Railway, and answers every expectation. One advantage of this telegraph is its capability of being repaired, or removed, with the greatest facility.

NEW MODE OF MEASURING HIGH TEMPERATURES.—Mr. John Wilson, of St. Helen's, has invented an ingenious method of bringing the higher temperatures of the melting points of metals, &c., within the range of the ordinary mercurial thermometer, by an accurately proportionate reduction obtained by heating a piece of platinum to the temperature to be measured, and then plunging it into a peculiar vessel, containing a known proportion of water, and ascertaining by a mercurial thermometer, the exact extent to which the temperature of the water was raised by the platinum.

ARTIFICIAL MARBLE.—A quantity of plaster of Paris is soaked in a solution of alum, baked in an oven, and ground to a powder; it is then used as wanted, by being mixed with water similar to plaster: it sets into an exceedingly hard composition, and takes a high polish. It may be mixed with various coloured minerals, or ochres, to represent the various marbles, and is a valuable receipt.

Mr. Jasper W. Rogers, the patentee of the peat charcoal and other productions from Irish peat, has obtained a verdict against the Irish Amelioration Society for 462*l.*. The action was brought by Mr. Rogers to recover a sum of 562*l.*, which he claimed to be entitled to—viz., 500*l.* for two quarters' salary as acting manager of the company, and 62*l.* for certain royalties.

CAST IRON FOR STREET PAVING.—In the *Mining Journal* of the 16th of August last, and subsequent Numbers, we noticed the introduction of cast-iron for paving carriage roads, patented by Messrs. T. Allan and Co., Springbank Iron-Works, Glasgow, which, from specimens laid down, appeared to give promise of success. Messrs. Kennard and Co., of Upper Thames-street, have recently submitted specimens of cast-iron pavement, designed by them, to the City Sewers Commission, with a request to be permitted to lay down a certain extent, at their own expense, in one of the leading thoroughfares of the City. Mr. Hayward, the surveyor to the commission, made a voluminous report, in which he stated that he had addressed letters to several gentlemen in Glasgow, and had received the most explicit replies as to the efficacy of the experiment, and that it was considered by them a successful application of cast-iron. The traffic causes much less noise by the wheels, but about the same by the horses as on stone pavement, the former running almost as smooth as on wood. To the inquiry, whether it is more or less slippery than stone, the replies appear favourable; and in a certificate, signed by the Lord Provost and the Surveyor of Pavements, it is said to be highly satisfactory, and that there is an almost entire absence of noise. The report concludes by expressing the opinion, which he cannot divest himself of, that however favourable these parties view the trial, iron must be more slippery than stone, as it is evident whatever foothold there is must be obtained by the grooving, on which the whole safety of the traffic depends, and it is only a question of time as to the destruction of this security—the Glasgow specimen not having been in use long enough to determine this point. From Mr. Hayward's own observations of the effect of traffic on the sewer iron gratings, he thinks cast-iron will not be found to possess that durability beneath a heavy traffic which many persons appear to expect from it. A discussion of some length took place on the motion to refer the question to a committee; but it was considered by the majority that, as the iron paving tried on the Surrey-side of Blackfriars-bridge in 1836 was a failure, the experiment would be dangerous, and the proposition was rejected.

## PATENT LAW REFORM.

The untoward fate of the Patent Law Amendment Bill, last session, and the inchoate rights and anomalous positions acquired under the temporary protection of the *Inventions* Act of 1851 by the exhibitors in the Crystal Palace, rendered the re-consideration of the question of Patent Law Reform, and the re-introduction of a bill to carry out this much-desired measure, the imperative and immediate duty of the Legislature after the opening of the present session. Accordingly, a new bill was introduced by Lord Colchester, and ordered to be printed on the 18th of last month. It has been passed through the House of Peers with commendable dispatch, and has now reached the Commons. Throughout the different stages it has failed to excite that amount of discussion and interest which was anticipated, and which are absolutely requisite for the public good, before it receives the Royal Assent; for the new bill, although similar in its general character to its unfortunate predecessors, contains three provisions—two of which were struck out in the last bill, and the latter makes its appearance now for the last time—which, we believe, will prove, if allowed to pass into law, most injurious to the common weal, and most unfair to individual inventors.

It would appear that in Patent Law Reform there can be no middle course. The purifiers of this branch of jurisprudence insist on inventors remaining *in statu quo*—"cribb'd, cabin'd, and confined" by tedious and antiquated forms of procedure, which mulct them at every stage in heavy fines and penalties; or else that these "discoverers of new and useful arts" should trust their fortunes to their guidance upon a new and untried course of legislation, and consent to the interference and control of Government functionaries, for the sake of cheapening and expediting the grants of letters patent. Why it should be deemed needful to abrogate and destroy, and then to reconstruct according to the crude ideas and strange conceits of mere sciolists and theorists, when it is simply required to amend and reform, is a question which ordinary mortals—not members of those families in whom the faculties for law making and law breaking are inherent—will find some difficulty in answering; and yet such is the case. We saw last year no inconsiderable portion of the committee and witnesses on Patent Law reform record their deliberate opinion that patents were injurious to trade, to inventors, and to the State, and not in accordance with the spirit of the age. The cant of this last phrase alone was wanting to complete the foolishness of the "opinion of eminent persons," which Lord Granville paraded before the House of Peers.

The unreserved and rather vehement expressions on this occasion of public opinion, in opposition to that of these "eminent persons," silenced them for the future; but has not succeeded in rendering their teaching entirely harmless. A more insidious, but no less baneful, course has now been adopted, which, if it will not cause the immediate discontinuance of grants by letters patent, will, at all events, sap the very foundation of the laws under which they are maintained, and by rendering them dependent on the decision of a new order of *bureau cratic*—existing only on condition of their not affecting and abridging the prerogative of the Crown—Heaven save the mark!—and of very doubtful efficiency and duration—will so disbold speculators, and frighten timid ones, that none will be found inclined to risk time and capital in matters which are removed out of the ordinary sphere of trade, and made dependent for success on the caprice of officials. One of the objectionable clauses proposes to appoint examiners to inquire into the novelty of inventions for which patents may be applied for, and to advise the law officers of the Crown to recommend the grant or refusal of protection accordingly. The peculiar authority, its extent, and the responsibility of the examiners is not distinctly set forth, nor very accurately defined in the bill. The practical results of this system, if ever carried out, will be delay, expense, and heartburnings, such as have never yet been experienced. Fancy a board of irresponsible examiners—all barristers, of course—with such a general smattering of scientific knowledge as may be obtained from occasionally reading up the subjects in encyclopedias, or lounging through a course of lectures at the Polytechnic, or other fashionable places of resort for the *délassement des ennemis*, or the be-wildering of schoolboys and *gobe mouches* by the exhibition of the phenomena of science; fancy these so competently qualified persons sitting in judgment on the merits and novelty of an invention! How long must the inventor wait before their decision is communicated to the law officer of the Crown, and his report is issued? Must it be until the examiners have arrived at a thorough knowledge of the branch of art or manufacture to which the invention has reference, or within a certain time, at the risk of its not being understood? Such are the alternatives to which inventors will be exposed. Take, again, the ease of an invention which is opposed. It may, as many of the most valuable do, consist of a simple, very simple, improvement; the substitution of one material for another, of one form for another, each in both examples bearing a strong resemblance to the other. The opposing parties set forth the employment of similar, almost identical, materials or forms, and the examiners are called in to decide. What knowledge, materials or forms, and the examiners are called in to decide. What knowledge may they possibly have to guide them to a righteous judgment? Theory will be of no avail; nothing short of practical knowledge, founded on actual experience, can enable them to ascertain whether or not this apparently slight variation of detail is an improvement; yet such it may be, as the history of industrial progress will prove in numerous instances—sugar boiling in vacuum pans, for example. Seeing how very slight may be the difference between the invention and the modes previously in use, and how very slight, in all probability, will be the practical knowledge of the examiners—semi-barristers, semi-savans, species of hybrids, with little law and less science—full of the importance of their office, and animated with the laudable desire of doing something in return for their salaries—it is only reasonable to infer that in a majority of cases of this nature no patents will be granted; and inventions which would give employment to thousands, and increase our trade and commerce manifold, will either remain a secret, or, if divulged, will fall to the ground.

It may appear absurd to state that any important invention, when once made public, would be allowed to sink into abeyance; but it is, nevertheless, true that no new mode or process of manufacture can be adopted without clashing with vested interests, and entailing a loss of varying amount upon the first adopter; and that where any one is at liberty to adopt the improvements at such cost, in all probability, no one will; for he who leads the way will have no monopoly under which he may make a surcharge to reimburse him for his experimental essays, his obsolete plant, and the re-education of his workmen.

If proof is required that an unpatented invention of great utility, when made public, is likely never to be adopted, we may cite the case of flax cotton. Fifty years ago, Lady Moira communicated the same invention to the Royal Society: it was made public, and recorded in the journals; but, because no one had any direct and great interest in promoting the use of the invention, as there would be had it been made the subject of a patent, it fell to the ground. The year before last the self-same process was re-invented by Mr. Athnesorg, of Holstein, and the Chevalier Claussen. The latter wisely patented it: the result is, that the re-invention has created great excitement, promises to be most efficiently and generally carried out; and last, though not least, has brought a golden harvest to the lucky patentee, for we hear of 30,000*l.* being given for one patent—the Scotch, and least profitable one, probably. Compare the cases of the re-inventors and the original inventor. Lady Moira got nothing, beyond the barren vote of thanks of the society;—they, a fortune.

[To be concluded in next week's *Mining Journal*.]

## New Patents.

## LIST OF PATENTS GRANTED DURING THE PAST WEEK.

S. Hall, Manchester, for improvements in the construction of coaks, taps, or valves. G. F. Parratt, Piccadilly, for improvements in life-rafts. W. E. Newton, Chancery-lane, for improvements in the construction of docks, basins, railways, and apparatus connected therewith, for raising or removing vessels or ships out of the water, or on dry land, for the purpose of preserving or repairing the same.

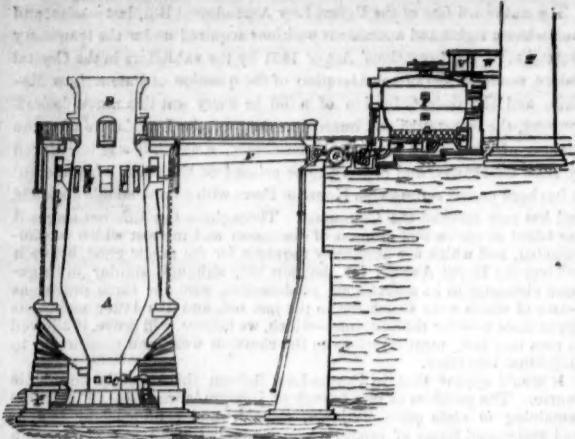
## DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

G. Thonger, Northampton, fly-catcher.—Fowler and Fry, Bristol, brick die.—G. Walsh, Halifax, beer-engine auction.—E. Cockay and Son, Frome, heating boiler.—R. W. Savage, St. James's-square, invisible door-spring.—T. Beckett, Manchester, spindle gauge.—Collins Brothers, Birmingham, crayon-holder.—F. Richmond and F. Chandler, Salford, chafing machine.—Gwest and Chirimes, Borthwick, water-closet service box.—T. D'Almaine and Co., Soho-square, hopper escapement for piano-forte.—P. A. L. de Fontaine, Finsbury, self-indicating altimeter.—E. Williams, George-street, Borough, machine for making rolled balls of boiled sugar.

## PROVISIONAL REGISTRATIONS.

T. Baylis, Strand, omnibus steps.—G. M. Ford, Portland-road, valve.—E. Cotherill, Birmingham, letter box.—T. Cooke, Jun., Birmingham, tubular oil-cloth cover for corncobs.—J. Wright and G. Hamington, Birmingham, Camberwell, official and corresponding envelope.—J. Clisson, Dublin, steamboat and railway chessboard and men.—J. L. Stevens, Kensington,

## THE GASES OF THE BLAST FURNACE.



Among the numerous improvements in the manufacture of iron, and the many appliances of late years resorted to for the economisation of fuel, there is, perhaps, none, next to the hot-blast question, against which greater prejudice existed at its introduction, on the effects of which a more extended variety of opinions are maintained, or one which will eventually prove of greater importance to iron metallurgical processes, than the application of the hitherto waste gases of the blast furnace, in heating the blast, calcining the ore, and other branches of the manufacture to which additional fuel had always previously been employed. The Coltness furnaces, in Lanarkshire, as recently arranged under Mr. Houldsworth's patent, and carried into practical effect by Mr. Hunter, the manager of the works, present a most excellent example of the economic application of these gases, which have, in most cases, ever been allowed to flow off unheated at the furnace tops. In addition to the large saving caused by the gases being employed to heat the blast and to raise the steam to work the blowing engine, which keeps the six immense furnaces in constant operation, there is still a surplus, which Mr. Houldsworth enlists into his service for the calcination of the ironstone and the lime, and the accompanying diagram will give a tolerably correct notion of the arrangement.

The blast-furnace, A, is, in its general details, unaltered from the original Coltness form—B being the mouth for the introduction of the ore and fuel, and C the blast-pipes. Near the top are annular flues or channel, D, is formed in the thickness of the walls, having a series of rectangular or other shaped apertures, E, forming the communication between it and the interior of the furnace. On the opposite side two openings are made in the wall on the outside of the annular flue, D, for the insertion of two elbow branches, opening into the pipes or flues, F. The opposite ends of this tube open into the main flue, G, which communicates by branch pipes, H, placed at convenient distances, with the calcining ovens, I, placed four in a row, to each blast-furnace. Each kiln has two inlet pipes for the gas, and each branch, H, instead of passing directly into the kiln, opens into a small detached furnace or fireplace, J, placed there for the purpose of igniting the gases previous to their entering the kiln by the pipes, K, opening from the upper part of the ignition furnace into an annular flue, formed in the thickness of the wall of the calcining kiln.

When the blast-furnace is in operation, a portion of the escaping products of the smelting process, consisting of highly combustible gases, flows from the upper part of the furnace through the outlet apertures, E, into the annular flue, D. Thence the gaseous current passes along the conveying flues, F, the quantity so passing being adjustable by the oscillating disc valves, M, rods from which hang down within reach of the furnace attendant beneath, who, when necessary, can entirely shut off the connection between all the kilns and the blast-furnace. The flow of gas from the main is similarly adjustable by valves, N, on the branches, H—the ends of which are expanded; and by a single-bladed valve, P, the gaseous current at this point is regulated, admitting it either above or below the grate-bars, or fire line, O, of the ignition furnaces. When this valve is turned downwards, the gases pass above it, and are directed entirely above the fire-bars; but the current can be made to pass entirely below, or divided—some portion passing above, and the remainder through the bars, by a suitable alteration of the position of the valve. An air-valve is also fitted to each ignition furnace, for the purpose of mingling a sufficient portion of oxygen with the passing gases to effect complete combustion. By another modification, the gaseous current passes along the pipes, K, into the annular flue of the kiln, which communicates with the interior by a series of inlet apertures, Q, set at regular intervals all round the base; through these apertures the gases and flame pass in, and effect the calcination of the ore built up on the floor. In order to effect the better distribution of the flame, in its action on the ore, a third flue, R, forms a communication between the interior of the annular flue and a second smaller one, or chamber, S formed in the centre of the base of the kiln. A considerable portion of the current passes into this chamber, whence it is diffused by a ring of openings into the centre of the mass of ore. The requisite draught for the calcining kilns is obtained by the chimney, T, which acts for the whole series of four kilns. The ascending gases, flame, and unconsumed vapour, passing up through the body of each kiln, are conducted off from the top by the outlet, U, opening into the long connecting flue, V, built along the range of kilns, and communicating by the short flue, W, with the chimney. The process of calcination, or roasting, is continued until the desired effect is produced upon the ore, when the gaseous current is cut off, and the kiln allowed to cool down, for the removal of the calcined ore by the doors, X, in front. Fresh charges are supplied by the top charging doors, Y—a line of rails being laid along and over the kilns for the passage of the charging waggon.

Mr. Houldsworth has also provided for the calcination of the limestone flux, but this branch of his plan has not yet been adopted. The coal and lime required per ton of iron is not increased—an important fact, which has been carefully ascertained. It is also a fact that ironstone calcined by the gases in close kilns is more easily reduced in the furnace, and, in reality, requiring a less quantity of coal, while the proportion of No. 1 iron is increased. The economy of this mode of calcining clay-band ironstone in coal, dross, and wages, is at least 2s. 6d. per ton of pig-iron—an important consideration, which must have its weight in these days of low prices and high competition.

GIESSEN DIPLOMA.—As the doctor's degree, from the University of Giessen, is now obtained by so many undeserving persons, and is getting into such disrepute, we are bound, on account of the respect we entertain for some of its professors, to bring the matter before the public. Many students in this country who have gone up for the examination of M.D., and who, on account of their stupidity, have been rejected over and over again, fly, as a last resort, to Jens or Giessen, pay 180 guilders (the German Universities are so poor that sometimes they will sell a degree for a few pounds), and return with the title of doctor, with which they are as much tickled as a child is when it first gets a watch. The *Lancet* exposed the system of German M.D.-ians some years ago, and did much good. If anything, the system of getting Ph. D. is just as gross and objectionable. Some of our first men in England have studied at Giessen (Kane, Playfair, Lindley, Muspratt, Hoffmann, Graham, Frankland), and have had the degree of Doctor of Philosophy conferred upon them. Such men confer honour on the degree, but when the Ph. D. (like a knighthood) is awarded to tallow-chandlers, retail druggists, and other small shopkeepers, the case is different. We have received the following letter from Paris upon the subject of the Giessen diploma:—"I have known the *biggest* fools to have obtained a Ph. D.; but then they never get No. 1, generally No. 3—i.e. the lowest possible. You must know, that if a person undergoes an examination he obtains a diploma, stating whether he has passed it, *cum laude* (with praise); *multa cum laude* (with great praise); *summa cum laude* (with the highest praise). Nothing is easier than to get the first, but it requires a clever and learned man to obtain the last. You will now understand why certain persons have a Ph. D. In fact, I look upon the title of Doctor as a very empty one, unless I see in a man's diploma that he has passed a severe examination. To be a fellow of any English Royal Society is worth a thousand Giessen Ph. D.'s. It proves ability of a very high order, especially when the candidate is carried unanimously. The M.D., or Ph. D., however, now only proves that a man has visited the town to pay for it." The letter from a German student, we believe, to be too true; we hope, for the sake of science and literature, that the vile system of granting degrees will be abolished. How is the public to know when a man sticks Ph. D. after his name whether he has a first-class or a third-class diploma? Only one prize should be awarded.

## ACCIDENTS.

Wigan.—We have to add to the overwhelming list of fatal explosions with which our columns have teemed for the past month, another awful catastrophe, by which nearly 40 more human beings have been hurried into eternity. This happened at Coppull Hall Colliery, about six miles from Wigan, belonging to Mr. John Hargreaves, near the Coppull Station of the North Union Railway. The pit is divided into the north and south workings, and two firemen were employed; they went their rounds before five o'clock on Thursday morning, and by six about 150 men were lowered, and many had proceeded to work in the north division. Thomas Smith, the fireman, on getting into the extreme level in the south, found a large accumulation of fire-damp, and, going back to where the men were waiting, prevented them entering, and left his son to see that none went to work, while he took the necessary measures, and communicated with the other officers. It is unknown what took place in the south workings, but about seven o'clock a tremendous explosion occurred, by which at least 32 men and boys were killed on the spot, and six brought out alive, but so mutilated that the majority cannot recover. The little boy Smith, 12 years old, who was left to see that the men did not go into the level, was among the killed. We shall be able to give further and more correct particulars in our next.

Aberdare.—The inquest on the bodies of the 64 men who were killed at the Middle Dyrifys Colliery, as recorded in our last, was resumed on Wednesday morning, but the inspection of the colliery not having been completed by Mr. Mackworth, it was again adjourned until Monday inst. The coroner, with a portion of the jury, Mr. Mackworth, and Mr. James, solicitor to Mr. Powell, the owner, then proceeded to the cottage of the two workmen Davis (father and son), who were shockingly burnt, to take their evidence. The son was unable to speak, but with much difficulty it was elicited from the father that on the morning of the accident, about five o'clock, after the men had left the deep heading, indications of a fall of roof were discovered, which took place about two hours afterwards. The gas descending the mine with the current, made its way to the furnace and exploded; the flame travelling backward accounts for the furnacemen escaping the after-damp. Mr. Mackworth and Mr. Blackwell, with a large number of viewers, then made a thorough investigation of the mine, in which it appears the airways were so shattered as to stop the current of air, thus fully accounting for the heaps of the dead, suffocated by the after-damp. It appeared a general opinion that, could these airways be strengthened, so as to resist the shock of the blast, the after-damp would generally be carried away by the current, and much less fatalities occur. A full report will be prepared for the inquest on Monday.

Durham.—The inquest on the bodies of the 22 men who were killed at the Hebburn Colliery explosion was resumed on Wednesday. The officers of the pit, in evidence, stated that there was a rule that the men should not take off the top of the lamp to obtain a light to blast, except in presence of the overman. The men, however, said they had never received instructions to such effect. Mr. Dunn, the Government Inspector, stated what he considered to be the cause of the explosion—the neglect of a lad in closing one of the doors which he had to attend to: he had gone in with some return trams, and remained until they were filled, during which time the door would be standing open, and the place filled with gas. The jury, after an hour's absence, returned a verdict, that the explosion which caused the death of the men was produced by an accumulation of inflammable gas in the middle board of the Hebburn A pit; and stated that they could not separate without expressing an opinion that there had been great want of caution in the safe working of the colliery. They further recommended that an additional trap be placed in the district, that the whole of the lamps be locked, and that no blasting take place in that part of the colliery wrought by lamps.

Llanelli.—It is with much regret we find that the bodies of the 27 men who were drowned at the Gwendraeth Colliery, as recorded last week, have not been recovered; and from the peculiar nature of the accident, it is doubtful if they ever will, or that it will be possible, again to open the colliery. The water is so thick and muddy, that the pumps can only be partially worked, and are quite ineffective for any ultimate good, and over the spot where the water rushed in, large sinkings, to the depth of 10 or 12 feet at surface, have taken place, probably from the breaking down of the pillars. David Evans, who escaped, stated that he was working near the shaft and the empty cage, with two other men and two boys, when they heard a fearful roar, and jumped into it; instantly a tremendous body of water rushed towards them, dashed the cage from its place, and he remembers catching at one of the guide-rods, by which he reached the surface, partially forced up the shaft by the water. He was insensible for a long time, but recovered during the night. The result of this accident is 10 widows and 35 orphans.

Sunderland.—W. Roxby fell down the East Pit at Castle Eden Colliery, and was killed. Wolverhampton.—W. Jones was killed by a fall of roof in Bull Pleck Colliery. West Bromwich.—G. Lee was killed by a fall of coal in Mr. Hartland's colliery. Falkirk.—A miner was caught between two hatches on an incline at Risk Ironstone Pit, and crushed to death.

Cwmaman.—R. Rees was sadly injured by an explosion in the Gelly Cefn-dyli Colliery.

Chesterfield.—Henry Longden was burnt by an explosion of fire-damp at Speightshill Ironstone Pits.

Fylde.—J. Laing was killed by a fall of coal in Kilmux Colliery.

An association has been projected under the title of the "Australian Burrah Burrah Gold Mining Company," managed by gentlemen who have resided in the colony for years. Some discredit was attached to this project from the anticipation of its title being a piracy of the famous Burrah Burrah; but we have had an opportunity of examining a gazetteer of the colony, also some maps, by which we find that the scene of the intended operations of this company is situated on a creek of that name, at least 1200 miles from Adelaide, being in Argyle, New South Wales; and the locality presents extremely favourable prospects—being in the immediate vicinity of where the greatest amount of gold is at present being collected. The land in the colony is freehold, a working staff of 50 men already engaged, an influential board of directors formed, and the company fully registered.

NICHOLLS, WILLIAMS, AND CO., ENGINEERS AND IRONFOUNDERS, BEDFORD FOUNDRY, TAVISTOCK, AND ROSELAND VALE FOUNDRY and HAMMER MILLS, LISKEARD, beg to announce to the Gold Mining Companies that they are MANUFACTURING HORIZONTAL and PORTABLE STEAM-ENGINES, of all sizes, fit for Pumping, Crushing, and other purposes; there are several advantages over the perpendicular rotary engine; first, the bob is dispensed with and heavy sweep rods; secondly, the cost of erection is much less both in engine and building; sheds put up with wood may be applied instead of stone walls, especially in foreign climates, where wood is plenty, and can be removed at much less cost.

Also, MANUFACTURERS of CHILIAN CRUSHING MILLS (on the newest principle), and CORNFISH CRUSHERS, similar to those used in the mines of Devon and Cornwall; dressing and mining tools of every description kept on sale.

Companies supplied with working engineers and mechanics, for erecting machinery in any part of the world.

SUBMARINE TELEGRAPH COMPANY.—The Public is informed that TELEGRAPHIC LINES have lately been OPENED to LYONS, MACON, BOULOGNE-SUR-MER, GUASTALLA, REGGIO, and MODENA. MESSAGES RECEIVED at the OFFICES of the COMPANY in LONDON, No. 30, CORNHILL.

FRANCIS EDWARDS, CHARLOTTE J. WOLLASTON, MANAGERS of the FREDERIC TOCHE, SOCIETY.

May 21, 1852.

NETHERLANDS LAND ENCLOSURE COMPANY. No. 46, MOORGATE-STREET, LONDON.

Notice is hereby given, that NO FURTHER APPLICATIONS for SHARES will be RECEIVED after SATURDAY, the 29th May inst. By order of the board, EDW. C. NICHOLLS, Secretary pro tem.

GRAND DUCHY OF BADEN CHARTERED NATIVE SILVER and SILVER-LEAD MINES.—SHARE CERTIFICATES will be EXCHANGED for the BANKERS RECEIPTS, on and after TUESDAY next, the 29th inst., at the Company's temporary offices, 67, Threadneedle-street.

EDWARD TAPLIN, Secretary.

IMPORTANT TO MINING COMPANIES.—A TRIAL of more than EIGHTEEN MONTHS has PROVED that a SAVING of upwards of FIFTY PER CENT. in the consumption of BUCKET LEATHER can now be EFFECTED, besides the loss of time and expense attendant upon having to change so often.

Full particulars will be forwarded on receipt of Post-office order for 10s. 6d., to Messrs. F. W. Travis and Co., 44, George-street, Westminster.

Just published, price 1s.

FREE PRODUCTION HAVING FREED TRADE!

The PRESSURE of TAXATION EXPOSED in a LECTURE, delivered in the University of Cambridge, with an APPLICATION of the PRINCIPLES to the PRESENT CRISIS.

By THOMAS BANFIELD, Esq.

Author of Six Lectures on the Organisation of Industry—Industry of the Rhine, &c.

London: G. Ridgway, Piccadilly; Eddington Wilson, Royal Exchange.

Just published, by Simpkin and Marshall, London.

THE WINNING AND WORKING OF COLLIERIES. The Second Edition, with extensive additions and improvements.

By MATTHIAS DUNN, Government Inspector of Mines.

Price, 12s. 6d.—To be had of the publishers; of the Author, St. Mary's place, New-castle-on-Tyne; and at the office of the *Mining Journal*, 26, Fleet-street, London.

STIRLING'S PATENTS FOR IMPROVEMENTS IN IRON.—1. TOUGHENED CAST-IRON, which is double the strength of ordinary cast-iron, and only 10s. to 12s. per ton extra.

2. ANTI-LAMINATING IRON, for RAILS and TIRES, &c., at an extra price of from 7s. 6d. to 10s. per ton. Also IMPROVEMENTS in the MAKING of WROUGHT-IRON, saving one process to the manufacturer.

The following Iron Manufacturers are duly LICENSED to MAKE the IRON:—

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The CLYDE IRON COMPANY ..... ditto Glasgow.

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The HERSEY COMPANY ..... Tipton, Staffordshire.

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Further particulars may be obtained on application to the agent; or to Mr. JEE, civil engineer, No. 6, John-street, Adelphi, London.

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SOLE LICENSOR FOR LONDON.

BELLS of very superior quality (Stirling's Patent) are also SUPPLIED.

VAUXHALL.—MASQUERADE ON THE DERBY DAY, WEDNESDAY, May 26, 1852.—Mr. R. WARDELL has the honour to acquaint the Nobility, Gentry, and the Public, that very important alterations have been effected since the close of the last season, amongst which may be mentioned, that the ARENA, formerly devoted to equestrian performance, has been TRANSFORMED into one of the most SPLENDID BALL ROOMS IN EUROPE—thus the gaieties of the Ball may be enjoyed, irrespective of weather, by 5000 persons.—Mr. J. Nathan, of Castle-street, Leicestershire, is appointed costumer.—Doors open at Ten o'clock. Tickets 10s. 5s.

\* \* \* The regular season will commence on Monday, the 31st inst.

## ACCIDENTS.

## CORNWALL RAILWAY.

DIRECTORS.

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WILLIAM MANSEL TWEEDY, Esq., Truro, Deputy Chairman

F. P. BARLOW, Esq., Director of the Great Western Railway

J. W. BULLER, Esq., Chairman of the Bristol and Exeter Railway

Dr. MILLER, Director of the Bristol and Exeter Railway

S. T. WOLLCOMBE, Esq., Chairman of the South Devon Railway

R. COLE, Esq., Director of the South Devon Railway

Dr. CARLYON, Truro

W. CARNE, Esq., Falmouth

R. W. FOX, Esq., Falmouth

J. GWATKIN, Esq., Parson Behan, Tregony

T. A. BULLER, Esq., Director of the South Devon Railway

R. COLE, Esq., Director of the South Devon Railway</

## WEST GRANADA or VERAGUAS GOLD AND SILVER MINING COMPANY.

CHAIRMAN.

GEORGE THOMAS BRAINE, Esq., 8, Hyde-park-terrace.

TREASURER.

FREDERICK MILDRED, Esq., Nicholas-lane.

GEORGE CLIVE, Esq., 20, Eaton-square.

BANKERS—Messrs. Masterman, Peters, and Co. the Commercial Bank of London.

BROKERS—Messrs. Hichens and Harrison, 18, Threadneedle-street.

SOLICITORS—Messrs. Baker, Buck, and Jennings, 34, Linen-street.

The unquestionable character of the title to these mines—the exemption from royalty and dues, the short distance from England—the proximity to the Atlantic coast, the quantity (17,000 tons) and quality of the ore at surface, valued at £180,000, extracted from the hill above adds to the prospect of speedy returns from this source—the great extent of the value and the progressive increase in richness in proportion to the depth, according to the tests made—afford ample ground for expectation that the dividends of the company will equal those of the richest gold and silver mines now known, and that the provisional contract entered into by the directors will, upon the verification of the report, have secured to the shareholders the possession, in perpetuity, of a property of great and increasing value.

The especial attention of the public is directed to the fact, that shareholders will be entitled, if the directors, upon the receipt of the report, shall determine to proceed no further, to return back the original 2s.—less the actual expenses, not exceeding 2s. per share.

Applications for shares may be made to the directors, at the offices of the company, 1, Royal Exchange-buildings; and Messrs. Hichens and Harrison, stockbrokers, Threadneedle-street. For further particulars see prospectus.

## THE YUBA RIVER ALLUVIAL GOLD COMPANY (EN COMMANDITE.)

BOARD OF SUPERVISION.

With entire control over the operations of the Company.

J. N. BROWNE, Esq., 13, King's Arms-yard

J. B. ILLIDGE, Esq., Brixton, Surrey

JOHN MASTERMAN, jun., Esq., 21, Nicholas-lane

GEO. COPELAND CAPPER, Esq., Leyton, Essex

Capt. CLIFFORD HENRY, Duxton-house, Northampton

JOHN DAVID BARRY, Esq., 84, Champs Elysées, Paris

BANKERS.

LONDON: Messrs. Masterman and Co.—PARIS: MM. Pedro Gil and Co.

The Directors have the pleasure of announcing to the shareholders that the title deed of the property on Ousley's Bar, which has been purchased for the operations of the Company, has just been received, and the title, under the original grant from the Mexican Government to Captain John A. Sutter, is fully authenticated and supported by the records of the State, and the highest legal authority in California. A map of the property, from the original survey, by order of Captain Sutter, made by Sylvester W. Higgins, United States Surveyor, also accompanies the deed.

Possession will be given to the Company's agent as soon as he shall arrive on the grounds, and he will be sent forward immediately, to prepare the way for practical operations. The Directors are also in receipt of further testimonials of the most respectable character, confirming those previously presented to them, regarding the auriferous deposits on the property, and the facilities for carrying out the designs of the Company on a large scale, and with great profit.

The property consists of 100 acres on Ousley's Bar, situate on the left bank of the Yuba River, about 12 miles from Marysville, the county town of Yuba County, California, which is at the junction of the Yuba and Feather Rivers, and the head of steam-boat navigation. Ousley's Bar is remarkable for never being overflowed by the highest freshets, and has been celebrated for its richness in gold, from the earliest discoveries of the precious metal in California.

The letters and certificates are submitted to the inspection of the shareholders for their satisfaction in regard to this property—the originals of which, together with all the papers referring to title, &c., are in the hands of the solicitors, Messrs. Coode, Browne, and Co., 10, King's Arms-yard.

Offices, 5, Tokenhouse-yard, May 10, 1852.

A GUÀ FRIA GOLD MINING COMPANY.—The Directors have RECEIVED ADVICES from their AGENT, Mr. Hepburn, who has arrived at San Francisco, with his party, and has visited the Agua Fria district. The general result of the information received from him is as follows:—

That there is a mine in the Agua Fria district, corresponding with that described by Mr. Jackson and Mr. Wright, that such mine is of recognised value, and that specimens were obtained from it by Mr. Jackson.

That the mine was in the possession of persons originally employed by Mr. Jackson on his discovery, but who have registered a claim thereto on their own account; having no machinery, however, these persons are unable to work the mine, and are willing to sell their interest in it; and Messrs. Palmer, Cook, and Co. have expressed their readiness to settle such claim, and put the Company in quiet possession. Mr. Hepburn, however, had declined to accept possession on these terms without communicating with the Directors.—The Directors have to inform the shareholders that they have taken advantage of Colonel Fremont's presence in London, accompanied by Mr. Wright, to obtain an extension of their mining ground, and also a very important modification of the royalties payable by the Company.

They have also to add, that the whole of the machinery intended for working the quartz rock is now completed, and shipped on board the schooner *Vizier*, which sailed on the 15th inst. Their engineer, Mr. Melville Wood, has also left for California.

By order, W. J. VIAN, Secretary.

A ROCKY BAR MINING COMPANY.—As it is now conceded that the "Squatters' title" in the only one recognised in California on Government land, and as it seems possible that it may hold even over lands claimed under Mexican grants, and as much distrust has recently prevailed in reference to land titles in California, it seems desirable to remind the holders of shares in this company, that the valuable quartz veins, of which possession has been obtained, are held in strict conformity with the rules and regulations of "Miners' Law," and which all the producers of gold in that country, and, indeed, all the merchants and others dependent upon the mining population, have the greatest interest in upholding.

Quiet and peaceful possession has been enjoyed, and no doubt or difficulty has ever occurred in regard either to the claims at Rocky Bar or at Massachusetts Hill, Grass Valley. The operations of the company, both in mining and machinery for crushing the ore and extracting the gold, are conducted without any other obstacles than such as are inseparable from undertakings of such magnitude in a country so remote from the great centres of industry.

L. G. MICKLES, Agent in London.

38, Throgmorton-street, May 20, 1852.

A THE MEGANTIC COPPER MINING COMPANY.—Township of INVERNESS, county of MEGANTIC, LOWER CANADA.

A freehold of 1800 acres of land, to be vested in the Company without dues or royalty.

Capital £125,000, in shares of £1 each—payable on allotment.

To be incorporated in Canada, pursuant to the 13th and 14th Vic. cap. 18, of the Canadian Legislature, according to which all liability of shareholders is avoided, on the capital being paid up.

BANKERS IN LONDON—Messrs. Martin, Stone, and Martins.

SOLICITOR IN LONDON—Mr. W. H. Cotterill, 32, Throgmorton-street.

BROKER IN LONDON—Mr. Francis Pawle, 23, Threadneedle-street.

SECRETARY IN LONDON—Mr. James Bartlett Truscott, No. 1, Three King-court, Lombard-street.

This vast and rich bed of mineral land is most conveniently situate in the township of Inverness, in the county of Megantic, Lower Canada, about 40 miles from Quebec, is of easy access at present, and conveyance will be much improved on the completion of the Richmond and Melbourne Railway. This railway, now in course of construction, is intended to be all laid down by the ensuing autumn, and will pass about eight miles from the property, and by its materials and produce can be transmitted from and to Quebec with facility and cheapness.

The property is purchased (but with an option of throwing it up until the 1st October next) for the sum of £100,000, of which sum the vendors agree to accept £50,000 in shares, and £50,000 in cash—the remainder of the capital is to be exclusively applied for the working of the mines, and to the general purposes of the Company, for which it is deemed amply sufficient. Power is conceded to work the mines in the interim, the produce to belong to the Company if the property be accepted; but if not, the produce is to belong to the vendors—they paying all charges of freight, &c.—the Company paying the costs incurred in working only.

Mining captains of acknowledged experience and ability, with competent inspectors on the part of the Company, accompanied by one of the board of management, will leave England for Canada in May, to survey the property; and on their return, which may be expected in July, will report, at the earliest moment, fully on the state and prospects of it.

The quantity of copper ore in this extensive tract of mineral land is unbounded, and may be wrought with facility and economy—thus showing a desirable investment, assuring early remuneration and continuous dividends to subscribers.

By analyses of the ores the following results have been obtained:—

77.44 per cent.; 77.38 per cent. for copper—by Prof. J. P. Norton, of Yale College

73.7 per cent. for copper—by James Cooke, of Darlington

72 per cent. for copper—by John Mitchell, of London

Specimens of the ore may be seen at No. 1, Three King-court, Lombard-street, where also reports of the mines, from Mr. John P. Cunningham, mining engineer, and Captain Richard Bray, may be inspected.

By the Act of the 13th and 14th Vic. cap. 18, of the Canadian Legislature, a very simple mode of incorporating a Company for a period of 50 years is authorised, and all liability of a shareholder (except for labourers and servants' wages) ceases on the capital of the Company being paid up. A copy of the Act may be seen at the office of Mr. Cotterill. If the Board of Management should deem it advisable that a special Act for the immediate regulation of this Company should be obtained from the Canadian Legislature, the vendors of the property have stipulated to obtain one at their own expense.

Until the Company shall be incorporated, and the property accepted, the capital subscribed will be paid to the bankers, Messrs. Martin, Stone, and Martins, to the credit of the trustees in London; the Board of Management are, however, in the meantime to be at liberty to draw to the extent of 1s. 6d. per share on 75,000 shares for expenses.

On the incorporation and acceptance of the property, the capital will be transferred to the account of the Company in Canada, and be applied by the Board of Management in payment of the purchase-money, and for the general purposes of the Company.

Should it be determined by the Board of Management, after the survey contemplated, and the further reports to be obtained, not to proceed, the balance of capital, after deducting the expenses to the extent mentioned, divided over 75,000 shares, will be returned to the parties producing certificates of shares.

Applications for shares, on or before the 22d inst., to be made to Mr. Francis Pawle, 23, Threadneedle-street; or to the London Secretary, 1, Three King-court, 32, Lombard-street, where prospectuses and reports of the mine may be obtained.

A THE MEGANTIC COPPER MINING COMPANY, LOWER CANADA.—Notice is hereby given, that NO APPLICATIONS for SHARES in this COMPANY can be RECEIVED after SATURDAY (this day), 22d inst.

JAMES BARTLETT TRUSCOTT, Secretary.

A THE ROYAL BRITISH BANK,—on the Scottish System (incorporated by Charter),—besides the transaction of all ordinary BANKING BUSINESS, GRANTS CASE CREDITS, and ALLOWS THREE PER CENT. per annum on SUMS of any amount DEPOSITED FOR SIX MONTHS.

HUGH INNES CAMERON, General Manager.

London: HEAD OFFICE—16, Tokenhouse-yard; BRANCHES—429, Strand, 77, Bridge-street, Lambeth, and 97, Goswell-road, Islington.

## BRITANNIA GOLD AND COPPER MINING COMPANY,

NORTH MOLTON, COUNTY DEVON.

CONDUCTED ON THE COST-BOOK PRINCIPLE.

26,000 parts, or shares, of £1 each—in certificates to bearer.

COMMITTEE OF MANAGEMENT.

Sir HENRY WINSTON BARRON, Bart., M.P.

JOSEPH CARY, Esq., Moorgate-street, and Lower Kensington Gore

MAURICE EVANS, Esq., Great St. Helen's

WILLIAM FLEXMAN, Esq., South Molton

WILLIAM KEENE, Esq., Harpur-street, Bloomsbury

Sir CHAS. SHARPE KIRKPATRICK, Bart., St. Peter's-square, Hammersmith

JOSIAH GRAHAM LOWE, Esq., Horbury-terrace, Kensington Park

FRANCIS MORRIS, Esq., Banks-side, Denmark-hill

CONSULTING ENGINEER.—Capt. W. S. Morsom, C.E., Great George-street, Westminster.

CAPTAIN OF THE MINE—Mr. Thomas Fessey, North Molton.

BANKERS—Messrs. Heywood, Kennards, and Co., Lombard-street.

BROKERS—Messrs. Adam and James Hilton, 2, Warnford-court, Throgmorton-street.

SECRETARY pro tem.—H. W. Taylor, Esq., F.G.S.

OFFICES.—VERNOX HOUSE, 50, PALL MALL, LONDON.

ABSTRACT OF PROSPECTUS.

THE WASHINGTTON CHEMICAL COMPANY, NEWCASTLE-ON-TYNE.—MANUFACTURERS OF PATTINSON'S OXICHLORIDE OF LEAD.

STEAM TO INDIA, CHINA, &amp;c.—Particulars of the regular MONTHLY MAIL STEAM CONVEYANCE.

AND OF THE ADDITIONAL LINES OF COMMUNICATION, NOW ESTABLISHED BY THE PENINSULAR AND ORIENTAL STEAM NAVIGATION COMPANY

with the EAST, &amp;c. &amp;c. The Company book PASSENGERS, and receive GOODS and PARCELS, as heretofore, for CEYLON, MADRAS, CALCUTTA, PENANG, SINGAPORE, and HONG KONG, by their steamers, starting from SOUTHAMPTON on the 20th of every month, and from SUEZ on or about the 5th of the month.

The next extra steamer will be dispatched from Southampton for Alexandria, on the 3d October next, in combination with an extra steamer, to leave Calcutta on or about the 20th of Sept. Passengers may be booked, and goods and parcels forwarded by these extra steamers to or from SOUTHAMPTON, ALEXANDRIA, ADEN, CEYLON, MADRAS, and CALCUTTA.

BOMBAY.—The Company will book passengers throughout from SOUTHAMPTON to BOMBAY by their steamers leaving England on the 20th of May, and of alternate months thereafter—such passengers being conveyed from ADEN to BOMBAY by their steamers appointed to leave BOMBAY on the 14th of May, and of alternate months thereafter, and affording, in connection with the steamers leaving CALCUTTA on the 3d of May, and of alternate months thereafter, direct conveyance for passengers, parcels, and goods from BOMBAY and WESTERN INDIA.

Passengers for Bombay can also proceed by this Company's steamers of the 20th of the month to Malta, thence to Alexandria, by Her Majesty's steamers, and from Suez by the Honourable East India Company's steamers.

MEDITERRANEAN.—MALTA: On the 20th and 29th of every month.—CONSTANTINOPLE: On the 29th of the month.—ALEXANDRIA: On the 20th of the month.—(The rates of passage-money and on these lines have been materially reduced).

SPAIN AND PORTUGAL.—Vigo, Oporto, Lisbon, Cadiz, and Gibraltar, on the 7th, 17th, and 27th of the month.

N.B.—Steam-ships of the Company now ply direct from Calcutta, Penang, Singapore, and Hong Kong, and between Hong Kong and Shanghai.

For further information and tariffs of the Company's recently revised and reduced rates of passage-money and freight, and for plans of the vessels, and to secure passages, &amp;c., apply at the company's offices, No. 122, Leadenhall-street, London; and Oriental-place, Southampton.

THE WASHINGTTON CHEMICAL COMPANY, NEWCASTLE-ON-TYNE.—MANUFACTURERS OF PATTINSON'S OXICHLORIDE OF LEAD.

The WASHINGTTON CHEMICAL COMPANY having, during the last year, established a MANUFACTORY of PATTINSON'S OXICHLORIDE OF LEAD, on a large scale, and being able to supply it with regularity, and to execute orders without delay, now proceed to bring this new and valuable preparation of lead before their friends and the public, quite sure that it will not, in the present age, be condemned because it is new; and that, if judged by its merits, it must make its way, and finally take its place as one of the important manufactures of this country.

Pattinson's Oxichloride of Lead is a chemical combination of one equivalent of chloride of lead, and one equivalent of oxide of lead—it being well-known that common white lead is a chemical combination of one equivalent of oxide of lead, and one equivalent (or thereabouts) of carbonic acid, constituting what is called in chemical language, carbonate of lead.

Now, there is no reason to conclude that carbonate of lead is the only compound of lead valuable as a paint, and still less that it should be the best compound of lead for that purpose. In point of fact, it is not so, for the newly-discovered Oxichloride, in most, if not all, respects is far superior; its colour is brilliantly white, and in a number of cases it has been tried against the best white lead that could be obtained; and after a period of upwards of two years it has been found to retain its white colour considerably better than the lead against which it was tried.

But the chief, and by far the most important, advantage it possesses, is its remarkable and very decided superiority of body—by which term the power of covering surface well and extensively is understood among painters. The attention of the discoverer was at a very early period drawn to this circumstance, and since that time the Washington Chemical Company have had abundant opportunities of placing its superiority, in this important particular, beyond all doubt. They have themselves performed a number of experiments, and have also caused a number of experiments to be performed, in the large way, by various practical men, to ascertain accurately its covering power as compared with the best white lead; and they now state the proportions to be

SIXTY TO ONE HUNDRED—that is, 60 lbs. of OXICHLORIDE PAINT WILL COVER AS MUCH SURFACE AS 100 lbs. OF THE BEST WHITE LEAD.

—the saving of cost being in the same proportion; besides this, the coating is thicker and more protective, both in and out of doors, as the *oxide of lead* has a hard, tenacious layer, more like an enamel than paint.In using the Oxichloride, no difference in the materials with which it is mixed is required—oil and turpentine being employed as usual both for work technically called *etting*, and for work intended to be varnished.

For the use of paper-stainers and leather dressers the Oxichloride is found to be peculiarly suitable.

The Washington Chemical Company strongly recommend this newly-discovered substance to the notice of consumers, both on account of its economy and its intrinsic good qualities as a paint.

OFFICE IN LONDON (Mr. RICHARD COOKE), No. 7, SISE-LANE.

Office of the Washington Chemical Company, 73, Grey-street, Newcastle-on-Tyne, Jan. 1, 18

## THE MINING SHARE LIST.

Shares.	Mines.	Paid.	Last Price.	Present Price.	Dividends per Share Declared.	Last Paid.
5120	Alfred Consols (copper), Phillack	45	102	141 15 4	£ 4 2 0 to May 1852	20 16 0 May, 1852
1248	Alley-Crib (silver-lead), Talybont, Wales	—	7	3	0 7 6 to Oct. 1851	0 5 0 Jan., 1851
3000	Anglesea Coal Company	4	3	4	10 per cent. Jan.	10 per cent. Jan.
1824	Ballswood (tin), St. Just	11	10	—	9 14 to May 1852	0 5 to May
4000	Bedford United (copper), Tavistock Devon	92	8	5 6 3	3 8 0 to April	0 2 6 to April
5000	Black Craig (lead), Klyndurbridge	5	3	—	0 2 6 to Nov. 1851	0 2 6 to Nov.
64	Boscastle Down (tin), St. Just	—	100	—	750 0 to May, 1849	—
200	Botallack (tin and copper), St. Just	912	120	—	235 5 to Feb. 1852	2 0 to Feb.
1000	Bryntail, Llanidloes, Montgomeryshire	3	14	—	5 0 to June	0 5 to June
1000	Callington (lead and copper), Callington, Cornwall	30	4	—	6 0 to Sept. 1847	1 0 to Sept.
4000	Calstock United (copper)	24	24	—	8 5 to Oct. 1851	0 5 to Oct.
1000	Carn Brea (copper and tin), Illogan	15	70	—	208 0 to Mar. 1852	2 0 to Mar.
128	Cornford (copper), Gwennap, Cornwall	75	64	—	—	—
256	Condurrow (copper and tin), Camborne, Cornwall	20	98	105	15 0 to Feb. 1852	2 0 to Feb.
128	Cwmystwyth (lead), Cardiganshire	60	170	—	5 0 to 1851	0 5 to 1851
1024	Devon Great Consols (copper), Tavistock	1	300	310	270 0 to May 1852	7 0 to May
672	Ding-Dong (tin), Gulval	5	6	—	55 0 to 1850	—
180	Dolcoath (copper and tin), Camborne	252	20	—	853 14 to 1847	—
2560	Drake Wad (tin and copper), Carleton	64	64	—	—	—
138	East Pool (tin and copper), Pool, Illogan, Cornwall	244	80	95	233 0 to 1843	—
94	East Wheal Croft (copper), Illogan, Cornwall	125	150	—	2245 0 to Mar. 1852	10 0 to March
3000	Fenton Pottery Coal and Iron	6	9	—	10 per cent. Jan.	10 per cent. Jan.
494	Fowey Consols (copper), Twardwath	40	30	—	—	—
3715	General Mining Company for Ireland (copper and lead)	18	3 1/2	—	45 per cent. to June	10 per cent. 1 year
100	Goginan (lead), Cardiganshire, Wales	5	150	—	440 0	—
96	Great Consols (copper), Gwennap, Cornwall	1000	200	—	353 6 8 1/2, 1851	—
11000	Great Polgoon (tin), St. Austell	3	3 1/2	3 3/4 x d.	6 6 to May	0 4 in May.
119	Great Work (tin), Germoe	100	200	—	127 0 to Feb. 1852	7 0 to Feb.
1024	Herodsfoot (lead), near Liskeard, Cornwall	84	4	—	25 0 to Feb. 1844	0 2 6 to Aug. Feb., 1844
1000	Holmbush (lead and copper), Callington	24	16	—	3 0 to 1847	0 5 in Sept.
2000	Holyford (copper), near Tipperary	11	74	—	0 5 to Sept. 1851	0 10 to Aug.
786	Kirkcudbrightshire (lead), Kirkcudbright	92	4	—	2 0 to 1st Aug.	15 0 to April
1000	Lewis (tin and copper), St. Erth	17	13	—	1096 0 to 5th Feb.	0 4 6 to July
160	Levant (copper and tin), St. Just	24	95	—	670 0 to 1st April	0 4 0 to April
100	Lisburne (lead), Cardiganshire, Wales	75	650	—	1 1 to 5th April	4 0 to Jan.
3000	Low's Patent Copper Smelting Company	9	10	—	20 9 to Mar. 1862	0 16 to Mar.
5000	Merrily (lead), Flint	23	7	7 7 7 7 7 7	1 15 to June 1881	0 10 to 1st Ju
10000	Mining Company of Ireland (copper, lead, and coal)	7	61	62 64	75 0 to March	15 0 to March
200	North Foot (copper and tin), Pool	22	175	—	25 0 to Nov.	0 10 to Nov.
140	North Roskear (copper), Camborne	10	180	—	39 0 to April 1852	4 0 0 in May.
6000	North Wheal Bassett (copper and tin), Illogan	—	10	—	119 15 to May, 1852	0 10 to Mar.
6400	Par Consols (copper), St. Blazey	—	14	—	0 17 6 to April 1852	0 7 6 to Apr.
1160	Perran St. George (copper and tin), Perranzabuloe	21	40	—	864 0 to Feb. 1852	5 0 to Feb.
200	Phanox (copper and tin), Linkinhorne	30	240	—	11 10 —	—
560	Providence Mines (tin), Uny Lelant	20	22	—	2 11 to July, 1849	0 6 to July
256	South Caradon (copper), St. Cleer	24	107	—	5 17 6 Sept. 1850	0 10 to Sept.
285	South Tolgus (copper), Redruth, Cornwall	16	160	160	14 7 6 to Nov.	0 10 to Nov.
248	South Wheal Frances (copper), Illogan	80	130	—	39 0 to April 1852	4 0 0 in May.
1034	Spears Consols (tin), St. Just, Cornwall	14	94	—	4 10 to Mar. 1851	0 10 to Mar.
1924	St. Asbyr and Grylls (copper and tin) Breage	3	84	—	277 0 to 5th April	7 p. ct. p. annum
94	St. Ives Consols (tin), St. Ives	80	125	—	277 5 to May 1852	5 0 April
1000	Stray Park and Camborne Vean (copper), Cornwall	16	10	—	10 0 to Feb.	—
9000	Tamar Consols (silver-lead), Beralston	44	4	—	2 10 to Sept. 1851	7 10 to Sept.
6000	Tincroft (copper and tin), near Pool, Illogan	7	112	112	2 2 6 to March	0 10 to Nov.
512	Trelawne (silver-lead), Menheniot	4	5	—	1 3 to Oct. 1847	0 5 Oct. 1847
4000	Treasvean (copper), Gwennap, Cornwall	6	24	—	402 10 to 5th April	7 10 to May
96	Trethellan (copper), Gwennap, Cornwall	32	200	—	277 5 to May 1852	7 p. ct. p. annum
130	Treviskey and Starvier (copper), Gwennap	130	175	—	10 0 to Feb.	—
130	Trumpton Consols (tin), near Holston	95	120	—	277 5 to May 1852	7 p. ct. p. annum
300	United Mines (tin), Gwennap	80	75	—	10 0 to 5th April	17 10 to May
1024	Wellington (copper and tin), Perranzabuloe	74	64	—	5 0 in 1850	5 0 in 1850
256	West Caradon (copper), Liskeard, Cornwall	20	120	120	2 10 to Sept. 1851	8 0 to Feb.
1024	West Providence (tin), St. Erth	5	47	—	2 2 6 to March	0 5 to March
256	West Bassett (copper), Illogan	101	430	—	4 0 April	—
256	West Buller (copper), Gwennap, Cornwall	4	94	—	5 0 —	17 10 to May
100	West Friendly (tin), St. Agnes	70	31	—	3 0 to Jan.	—
128	West Friendship (copper), Devon	120	125	—	2339 0 to Feb. 1852	5 0 to Feb.
6000	West Golden Consols (silver-lead), Perranzabuloe	3	41	—	1 0 to July, 1851	0 5 to July
430	West Lovel (tin), Helston	38	38	—	12 10 to 7th Feb.	2 10 to Feb.
112	West Margaret (tin), Uny Lelant	79	140	—	196 0 to May	2 10 to May
512	West Mary Ann (lead), Menheniot	54	43	—	31 5 to Aug. 1851	3 0 to Aug.
40	West Owles, St. Just, Cornwall	140	250	—	120 0 —	—
240	West Reeth (tin), Uny Lelant	20	80	—	34 10 to Feb.	4 10 to Feb.
198	West Seton (tin and copper), Camborne, Cornwall	107	85	—	209 10 to Apr. 1852	4 0 to April
520	West Trelawny (silver-lead), Liskeard, Cornwall	81	45	—	26 10 to April, 1851	2 0 to May
1924	West Tremayne (tin and cop.), Gwennap, Cornwall	98	23 23	23 23	7 15 to March	0 10 to March
6000	Wicklow (copper), Wicklow	6	28 1/2	28 1/2	348 per cent. March 1852	25 p. ct. March

## FOREIGN MINES.

Shares.	Paid.	Last Price.	Present Price.	Paid.	Last Price.	Present Price.
<b>MINES WHICH HAVE SOLD ORES.</b>						
5000	Alion Mining Company (copper), Norway	243	1 1/2	—	3 0 0 to Mar. 1848	—
10000	Brasilian Imperial (gold), Brazil	—	33	—	3 17 6 to Dec. 1844	—
1800	Cobre Copper Company (copper), Cuba	40	5 1/2	33 1/4	5 10 0 to Jan. 1852	5 2. to Jan.
1000	Copiago Mining Company (copper), Chile	14	10	—	3 18 0 to Oct. 1851	5s. to Oct. 1851
30000	General Mining Association (iron & coal), Nova Scotia	20	10	10	6 10 0 to June 1851	10s. June 1851
2700	Marmato (gold), Colombia	12	12	—	3 0 0 to Dec. 1851	17. to Dec. 1851
7000	Royal Santiago (copper), Cuba	14	9 1/2	—	—	17. 10s. to Dec.
11630	St. John del Rey (gold), Brazil	15	15	—	12 12 6 to Feb. 1850	7s. 6d. Feb., 1850
48174	United Mexican (silver), Mexico	AV.	284	2	12 12 6 to Feb. 1850	—

Shares.	Paid.	Last Price.	Present Price.	Paid.	Last Price.	Present Price.
<b>MINES WHICH HAVE SOLD ORES.</b>						
940	Balnoon Consols (tin), Uny Lelant	—	3	10	1 1/2	—
1024	Baldwinnen United (tin), Sancroft	34	1	—	3 25	